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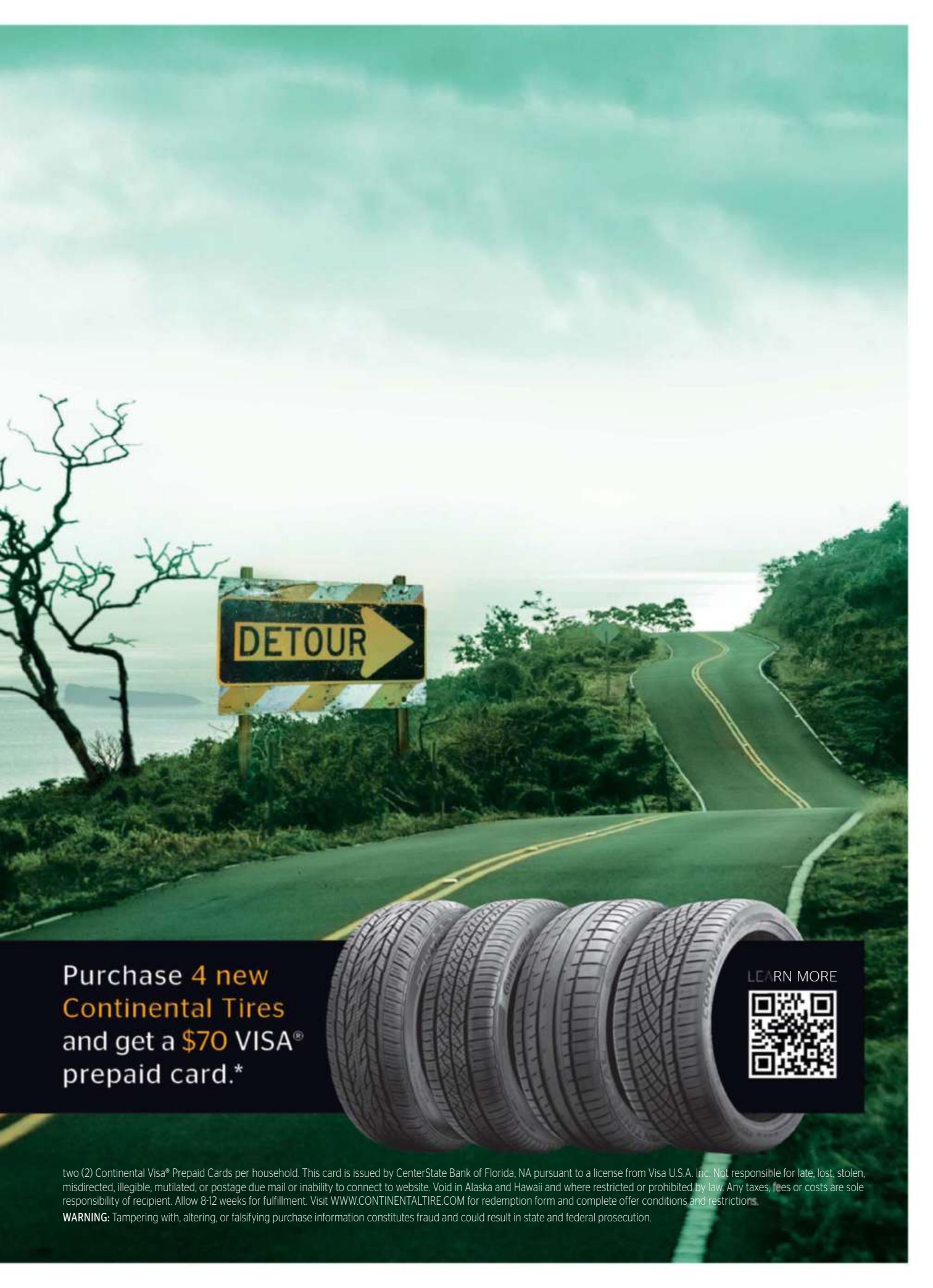
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ON THE COVER

At a recent drive program we found a rare white Rebel left alone with the key fob on the dash and no one in sight. As any good person would do, we jumped in the driver seat and tore off towards the nearest unpaved road and got it dirty! We're pretty certain the owner didn't mind.

Photo: Jason Gonderman



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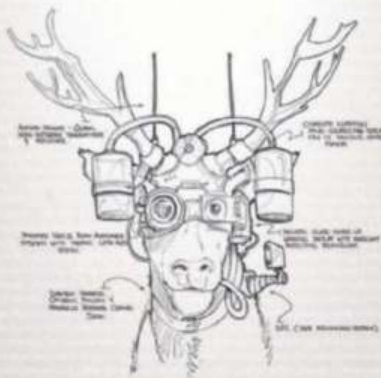
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Special Edition

It seems that every time I turn around these days there's a new special edition of something. There are one-off soft drinks, movies released with special bonus features, albums with never-before-released songs, etc.—I could keep going. It's certainly a fantastic tool that helps get or keep people interested in a product, even if it's one that they never intended to buy. This approach comes straight out of Marketing 101.

The auto industry is no stranger to this approach, either, and has been offering special editions and limited-availability models practically since its birth in the early 1900s. The

truck side has dabbled in this area as well with models like Chevy's 454SS, Ford's Lightning, and Ram's SRT-10 pickup. However, as the auto industry slowed down during the late 2000s, a good bulk of the special edition models went away as well. At the time it just didn't make financial sense to be producing these low-volume, low-margin trucks.

Fortunately, the auto industry recovered and we're now seeing a resurgence of factory special editions and limited models. One could argue it was Ford's F-150 Raptor that broke the ice and has

led to this new wave of fun trucks. It's been said that Raptor's worst year of sales was still better than the best year for the Lightning. All this means for us, the consumers, are more options when we visit the dealer. This is a win-win-win!

In the last year we've seen at least one model from almost all of the truck manufacturers. Ram introduced us to the Black Express: a model described as "black on black" and built on the motto of "if it can be black, make it black." This truck sports 20-inch black aluminum wheels, blacked-out emblems, LED taillights, and so much more. And what's best is this model is built on the Express trim level, so it won't break the bank to get an attention grabbing customized truck right from the dealer.

Ford just showed us the Special Edition

Appearance Package for the '16 F-150. Added to an XLT or Lariat model, the package gets unique 20-inch wheels, exterior graphics, black running boards, a dark anodized grille with red accents, and custom leather seats with red accents and stitching. This model is built on a higher-end trim and is likely to have a bit steeper price tag attached, but for the person wanting an attention-getting F-150, there's none better.

Chevy has taken the special edition concept and fully embraced it. The company is offering six custom Silverado 1500s for '15. The Silverado Rally Edition is built on an LT trim and can be had in extended or Crew Cab. The Midnight Edition Silverado is built on a Z71 platform and is totally blacked out. However, if you wanted one, it might be too late, as Chevy says the Midnight is sold out. Custom Sport and Custom Sport Plus also begin life as a Z71 and come in either black or white and sport a chrome grille, accents, and 20-inch wheels. If you wanted a Midnight and can't get it, don't fret, the Black Out Edition is still available. Built on the affordable WT trim, the Black Out gets black 20-inch wheels, tinted windows, black grille, and black Bowties. It's a pretty sinister looking pickup. And last is the Texas Longhorns Edition, which is also no longer available for purchase.

I'd be remiss if I didn't also at least acknowledge Toyota's TRD Pro Tacoma, Tundra, and 4Runner. Chevy also offers up the Colorado Z71 Trail Boss and Midnight Edition. There's also Jeep with the Wrangler Rubicon X, Willys, Freedom, Hard Rock, and Altitude. There is also my personal favorite: the Grand Cherokee SRT.

Seeing the return of factory customized is nothing but good for the industry as a whole. It gives buyers the option of having a custom looking truck that is backed by the factory warranty and allows them the ability to finance the purchase, instead of coming out of pocket for the modifications after the fact. I, for one, am excited to see where this new trend goes and what trucks hit the market in the near future. **TT**



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EMISSIONS CHECK

POWER STRUGGLE

I just read G.R. Whale's most recent (Sep./Oct. '15) Whale Watching editorial. I understand that a certain ego in some consumers may want to be able to say that their truck is a "Grander"—that it has 1,000 lb-ft of torque. But why would most consumers need it? As a person with a small business, I need a vehicle that can meet my business requirements, but at the same time, not cost me an arm and a leg in fuel costs.

I used to drive a '95 Dodge Ram 2500. It did everything I needed, and I did a lot of towing and hauling. Understandably, my needs are not commensurate with all consumers, of course (for example, most just commute and some do some very challenging work).

It'd be very nice if the power struggles would end and instead focus on increasing the efficiency of these massive-output engines in the name of affording to drive them.

Rick Kulesh

North Kingstown, Rhode Island

While we're not quite sure where it will end either, we're certainly enjoying the ride! We will agree that the torque wars appear to amount to marketing hype and not a consumer-driven demand for more power. However, the byproduct of this is, in fact, an increase in fuel efficiency. In testing we've been able to achieve between 18 and 23 mpg in all three brands of ¾-ton pickups. And these were fully loaded crew-cab four-wheel-drive trucks, not base model strippers. At its very simplest, the increase in torque is allowing the engine to move these heavy trucks down the road with less effort, resulting in the increase in economy.

ALL FIRED UP

I wanted to show you what I have been building for the past 3½ years. This truck has been in our family for 30 years and is the only one ever built for the government. My father started and ran a volunteer fire department from 1975 to 2003 in Ketchikan, Alaska. This truck is a '60 Jeep FC with a small-block Chevy engine, TH400 transmission, Dana 60 front axle, and Dana 70 in the rear.

Craig Thomas

Ketchikan, Alaska

The truck is awesome, and you guys did a wonderful job on the restoration! Thank you for sharing. We love seeing reader builds like this!

BLAME GAS

Just read your recent article on E85. Two things I would like to point out is that E85 will not damage a non-FFV, but it will likely cause the check engine light since the fuel flow requirements are beyond the calibration limits. FFVs and non-FFVs have the same fuel components other than a possibly larger evaporative carbon canister.

For issues related to fuel hoses, gaskets, and plastics, it is not the ethanol that causes the most problems but issues with having 25 percent aromatics in our fuel. Most material testing never uses real world fuel but what is called Fuel C, and they always make aggressive alcohol, which means they add sulfuric acid and salt that they say helps in reducing testing timeframes. I can make an aggressive gasoline just as easy, but the American Petroleum Institute would never allow that to happen. It is the oxidation of gasoline and not ethanol that causes peroxides to form in gasoline, and that causes



ALL FIRED UP

the most damage to fuel systems.

Steve VanderGriend

Colwich, Kansas

Very interesting, thank you for passing along that insight! While we don't have enough chemistry knowledge to argue if it's the poor grade of gasoline used in the mix or the ethanol that can cause issues to non-FFVs, we can say with some degree of certainty that there are in fact parts changes that occur between an FFV and a non-FFV of the same model. However, this was far more prevalent in previous years, as now manufacturers are more likely to design an entire model or engine line as E85-capable, instead of offering both. However, it's still not a good idea to run E85 in a vehicle not designed for it.

ENERGY NEGATIVE

Your ethanol and biodiesel articles in the July/August '15 issue are some of the purest fantasy I have seen in some time. The ethanol industry has been in operation for over 30 years and still must be subsidized by millions of dollars of the taxpayers' money to produce an inferior product. The EPA has hundreds of file cabinets filled with test data that states the ethanol does nothing to make our world

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EMISSIONS CHECK



LUXURY RULES

better. The biodiesel crap is no different, and if the taxpayers were not funding these idiotic ideas, they would have died long ago. It is a pity that you are in bed with these lowlifes promoting these fairy tales.

Robert Koehler
Andover, Illinois

Why are we using food for fuel when it has a negative gain both in the cost to produce and the untold likely-billions of dollars it has cost consumers plagued by problems ethanol and biodiesel have directly caused?

President Jimmy Carter told us in 1977 we had a finite amount of fossil fuel, and he proclaimed that the planet's proven oil reserves could be consumed "by the end of the next decade." Thus the quest began for alternate sources, including burning our food for fuel. Now we are told corn and bean fuel are clean burning and "good for the planet," no matter that planting, harvesting, and producing consumes so much fossil fuel resulting in the negative gain. Now, researchers at the University of Minnesota have concluded that the amount of water used in ethanol production varies from 5 to 2,138 liters of water per liter of ethanol. How can this be rationalized?

Daryl Gerber
Via Email

To quote ourselves at the conclusion of the piece on E85, "For our money, it's still a better bet to drink the distilled corn than to burn it." We very purposefully stayed out of the political arguments and instead decided to simply report on the facts. It is true that E85 is the fastest-growing alternative to gasoline; it is true that it is typically less expensive than gasoline; and it is also true that it returns poorer fuel economy than gasoline. So take away from that what you will.

Biodiesel is a whole different animal. Yes, there are some government subsidies backing production but nothing like the ethanol industry. Add in the fact that biodiesel is primarily produced from waste products and it becomes a little bit more difficult to argue against.

At the end of the day, the government subsidizes the exploration for and production of petroleum-based products (gasoline) far heavier than any alternative fuel. But again, we're staying out of the politics of it all.

LUXURY RULES

I was reading the July/August '15 issue and on page 24 you discuss high-end trucks. You state that many of the readers would "like to see a return to more basic, utilitarian trucks, and many of us on staff share that sentiment, (but) the marketplace has spoken and top-trim trucks are big money makers for dealers and manufacturers."

When the "marketplace" speaks? I thought that the "marketplace" was the buying public. I did not think "the marketplace" was the dealers and the manufacturers. Am I incorrect?

Jeff Conforti
Franklin Lakes New Jersey

You are correct: the marketplace is, in fact, the buying public. Trouble is, our staff and Truck Trend readers fall into the enthusiast category, and we're a pretty small percentage of the marketplace. While we would love to see more crank windows and vinyl floors, dealers can't seem to keep the high-end luxury trucks on the lots. Ford sells far more Platinum and King Ranch-trimmed pickups than XLs, and the same holds true for the Ram Laramie and Limited. GMC has even said that Denali makes up over half of their pickup sales, leaving all of the other trims to account for the rest.

REBELLIOUS

I want a Ram Rebel and I want it NOW! But can I please have it with the 3.0L EcoDiesel? Can you ask FCA to build one for me fully loaded? Thank you in advance.

Jeffrey Conforti
Franklin Lakes, New Jersey

We asked, they said no. Sorry.

REBEL OR NOT

I was actually interested in the Ram Rebel until I got to page 63 of your July/August '15 issue. The biggest engine available is the 5.7L Hemi?! No 6.4L Hemi? I bet it only comes with an eight-speed automatic and no stick. And you can't even get a 6½-foot bed but a 5-foot, 7-inch bed? What's up with these ever-shorter truck beds? Guess they think nobody really uses a truck bed.

John Miller
Rolla, Missouri

You are correct about the Rebel: The largest engine is the 5.7L Hemi and both engine options come backed with the eight-speed transmission. While we would love to see the 6.4L Hemi make its way into a 1500, we doubt it will ever happen. That particular engine is available in the ¾ and 1-ton trucks only. On the bed note, people asked for larger cabs, and that space has to come from somewhere, so beds got shorter. Good thing you can still get up to an 8-foot bed on a Ram 1500; just not a Rebel. What's happening here is you're confusing the Rebel for something that it is not. The Rebel is an off-road capable pickup built for a specific audience. You sound like you'd be better suited to a Ram 2500 with an extended cab, 8-foot bed, and 6.4L Hemi V-8.

SPEED RACER

Please test some of your vehicle's fuel mileage while going the legal speed limit or less. Not everyone drives over the speed limit. By not doing this, you are denying your readers the truth about the exceptional mileage today's modern vehicles can achieve.

Paul C. Nation
Via Email

Now why would we test fuel economy below the speed limit? That just seems silly and, not to mention, unsafe. It's also unfair of you to assume that we just rip around the streets like NASCAR racers while testing pickups. When we test vehicles we oftentimes simply go about our normal days, following the flow of traffic, to achieve the most accurate real-world fuel economy possible. It's fantastic if a pickup can achieve X mpg while going 55 mph on a straight flat road, but the reality is most people live in a world that also has traffic, stop signs, signals, pedestrians, hills, and so on.

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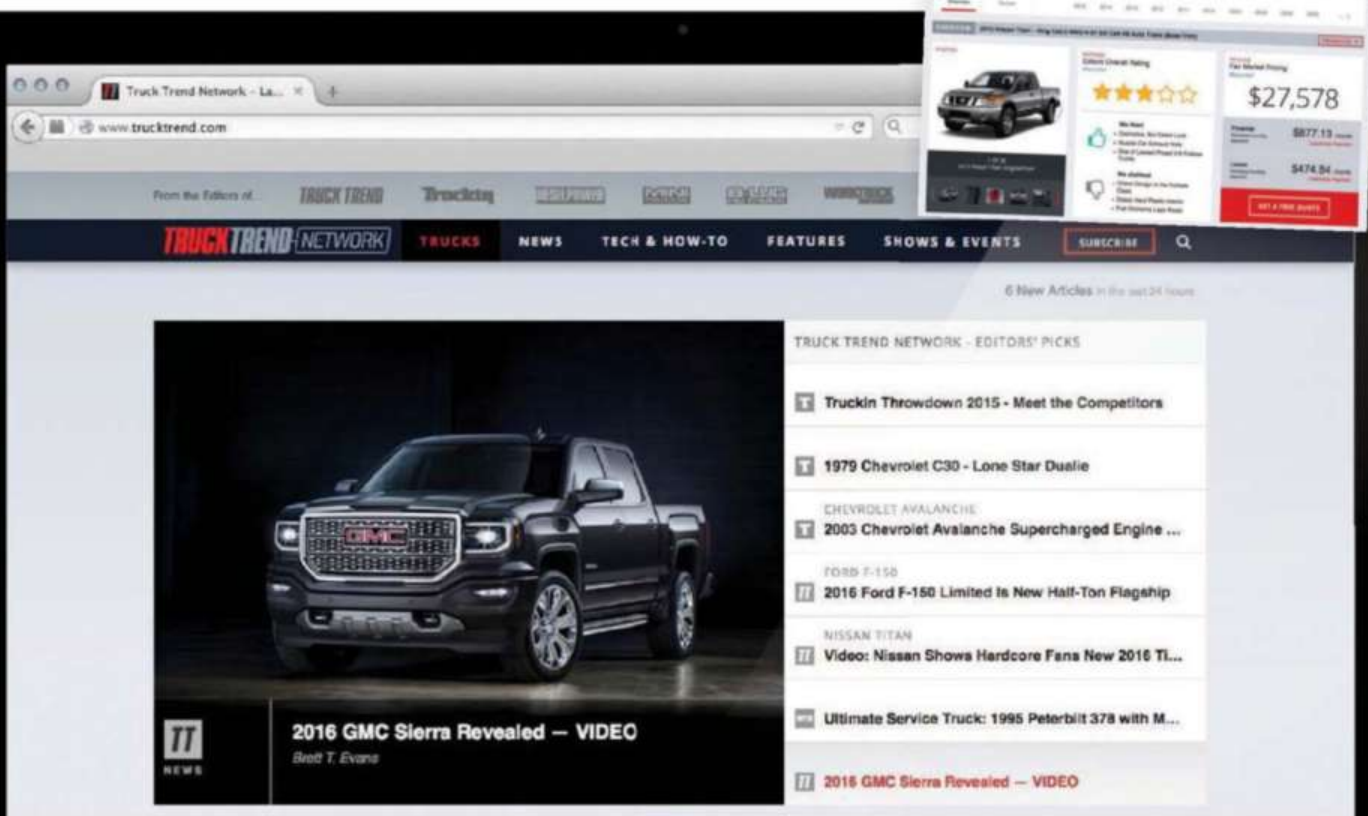
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FORD AUSTRALIA REGISTERS “RANGER RAPTOR” AND “FX4” TRADEMARKS

» **THE FORD** F-150 Raptor has been such a hit in North America that the name may be applied to other models in Ford's global lineup, most notably the global Ranger pickup. Ford has registered the trademarks “Ranger Raptor” and “Ranger FX4” locally, believed to be in preparation for new models debuting in the next few years. Officially, Ford says the

recently introduced Wildtrak will be the Ranger's top-spec model, but some Ranger prototypes sporting fender flares and larger wheels and tires have been seen testing in Australia. Who knows what's to come for the midsize Blue Oval?

OUT WITH THE NISSAN ROGUE SELECT, IN WITH THE QASHQAI?

YOU MAY not know that Nissan still sells the previous-generation Rogue as the Rogue Select (mostly for fleet owners and others concerned with the bottom-dollar price and nothing else). Well, the outdated crossover may soon be replaced with the oddly named Qashqai (say cash-KYE).

If the Qashqai makes the jump from global markets to the United States, it will give Nissan a compact crossover that's based on a shortened version of the Rogue's platform, removing that vehicle's optional third-row seat and providing a bit more urban nimbleness and parkability. It will be more refined and offer more technology than the Rogue Select at a similar price.



2016 SILVERADO AND SIERRA GET A REFRESH

THE '16 Chevrolet Silverado is getting an update, including expanded options availability, more widespread use of the eight-speed automatic transmission, and a bit of a facelift.

A totally revised front end establishes some family resemblance with the smaller Colorado midsize pickup. Although the pickup's headlight

housing is still square, the headlights themselves are more angular and feature LED light piping and technochic internals, while a sculpted grille and hood provide some added visual flash.

Like the Silverado, GMC's '16 Sierra 1500 receives new head and taillights, grille treatments, bumpers, and hood, with additional interior and powertrain

updates coming along as well. GMC claims that exterior styling is the top reason customers choose the Sierra, so hopefully the company's work doesn't spoil that reputation.

Full LED lighting, additional Apple CarPlay and Android Auto function-

ality, and an updated version of the IntelliLink infotainment system are also on deck for the Sierra.

GMC and Chevrolet are on a sales hot streak right now, with combined light-truck sales that beat even Ford's F-150 occasionally.



FORBIDDEN FRUIT: UPDATED 2016 MAZDA BT-50

The '16 Mazda BT-50 received some cosmetic surgery to bring its styling into line with Mazda's current design language. The global-market midsize pickup is still available with one of two diesel powerplants, and it still shares a good deal of its bones with the Ford Ranger T6. Thailand and Australia will be the first to sample the updated pickup, which is not slated for American sales any time soon. Maybe Mazda should reconsider...



THE MERCEDES-BENZ FOR KIDS

A big part of Lego's popularity is the company's continuing innovation and introduction of new products. The latest addition to the Lego Technic portfolio is the company's model of the Mercedes-Benz Arocs 3245 truck.

This model features an articulating suspension and Lego's new Pneumatics 2.0 system to power the bucket loader. It's one of the most complex and sophisticated in the Lego Technic line, with more than 2,700 individual pieces and an overall length of up to 30 inches.



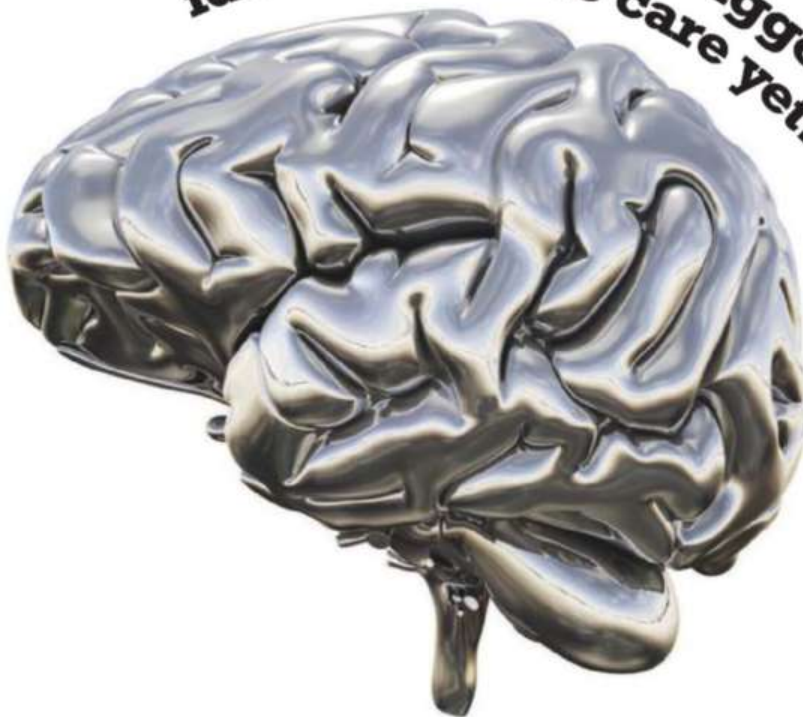
THE END OF THE CHICKEN TAX?

The longstanding 25 percent tariff on pickups and commercial vans imported from outside the North American Free Trade Agreement region, known as the chicken tax, may soon be repealed.

Ongoing scrutiny of trade agreements with nations in the European Union and Pacific Rim has led Congress to pass a "fast-track" bill, giving President Barack Obama the authority to negotiate trade agreements and send them to Congress for approval. Such a system would allow for the chicken tax's eventual death, but many policymakers are insistent that other nations' similar taxes on American goods end as well.



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2017 CADILLAC XT5 CROSSOVER DETAILED

CADILLAC HAS a lot riding on its replacement for the best-selling SRX (shown), the XT5. It's believed GM's widely used 2.0L gasoline direct-injected (GDI) turbo will be the standard engine on the XT5, mated to a nine-speed automatic transmission. Additional engine options could include a version of GM's new 3.6L V-6. A 2.7L or 3.0L turbo V-6 may be the top engine

option, with possibly a turbodiesel for export markets. The company's Super-Cruise drive mode should be an option, coordinating lane-keeping assist, adaptive cruise control, and forward collision braking to provide semi-autonomous highway driving.



SPIED: 2017 Ford Super Duty

FORD IS close to unveiling its next-generation Super Duty Trucks, with several variants undergoing testing in California's Death Valley. In addition to the expected F-250 and F-350 variants, we see what's believed to be the F-450 with its signature 10-lug wheels.

The aluminum-bodied heavy-duty pickup will likely be unveiled at the 2015 Texas State Fair, giving attendees an up-close look at Ford's heavy hauler. Expect class-beating (or one-upping) trailer towing and payload ratings, and Ford's well-regarded 6.7L Power Stroke V-8 will likely get a boost in power and torque as well.



GM Thailand Churns Out U.S.-Bound 2.8L Diesel

THE HIGHLY anticipated Chevrolet Colorado diesel and GMC Canyon diesel moves one step closer to reality with the announcement that General Motors' Rayong, Thailand, powertrain plant has started production of U.S.-bound 2.8L Duramax I-4 engines.

The engine has been produced in

Thailand since 2011, with the second-generation 2.8L Duramax arriving in 2013. The engine destined for the U.S. is based on the second generation and incorporates a number of refinements, including a water-cooled variable-geometry turbo, a high-pressure fuel system, and quieter operation.



Bye-Bye TRD Superchargers

ONE OF the Toyota Tundra and Tacoma's distinguishing characteristics that made them attractive to enthusiasts were the availability of dealer-installed superchargers that were fully covered by the powertrain warranty and added a meaningful increase to performance to the V-6

and V-8 engines. Well, if you're a fan of TRD blowers, you'd better act fast because there won't be any more in the future. The superchargers are no longer being produced, with existing inventory being sold off until there is nothing left.





Propane-Converted 2016 F-150 Available from Westport

WESTPORT INNOVATIONS, the Canadian engineering firm that specializes in gaseous fuel conversions for trucks, has announced the availability of a single-fuel propane system for the '16 Ford F-150. Unlike some other conversions, the propane tanks are mounted under the body, allowing for full use of the truck bed, a key factor for buyers for whom cargo utility is a priority.

The Westport propane system features a standard 24-gallon or optional 16-gallon tank, simplified maintenance with a replaceable inline filter, and a fuel pump life expectancy of 150,000 miles. The conversion leaves Ford's standard OEM powertrain and bumper-to-bumper warranty intact.



LR Defender Production Outside U.K. Possible

THE LATEST brand to eye offshore production for one of its models is Land Rover. According to Autocar, the company is looking at Eastern Europe as a potential production spot for the next-generation Defender SUV.

Although some might interpret the offshoring of production as a vote of no confidence in the U.K., the report says the potential move has more to do with the fact that JLR's British factories are operating near full capacity on hot demand for the Range Rover, Range Rover Evoque, and Land Rover Discovery Sport.



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RAM 3500 BREAKS 900-LB-FT BARRIER

RAM HAS just raised the bar even further for '16 with the announcement of the max torque figure for the '16 Ram 3500 equipped with the Cummins 6.7L turbodiesel I-6 at a staggering 900 lb-ft.

That figure represents a 35 lb-ft increase from the '15 model and a 40 lb-ft advantage over

its next closest rival, the Ford 6.7L Power Stroke V-8, which has 860 lb-ft. Ram claims the torque figure is the highest ever offered in a non-commercial mass-production vehicle. It also allows properly equipped Ram 3500s to tow 31,210 pounds.



Inside the World's Coolest Toyota Sienna

BASED ON the '15 Toyota Tacoma's platform, the Toyota Sienna Ultimate Utility Vehicle is a one-off, custom showpiece that will be making its way around the nation before taking residence in the company's booth at the 2015 SEMA Show in November.

According to Toyota, the Sienna UUV gets a 4-inch suspension lift, 37-inch Nitto Mud Grappler tires on 22-inch wheels, a TRD supercharger, and Wilwood disc brakes, among other features. The body is extensively modified for off-road duty, including some gee-whiz rear-opening front doors. It'd be perfect for your soccer carpool, especially if the playing field is located at the top of the Rubicon Trail.

Hennessey VelociRaptor SUV: Now With More Super Duty

» WHILE THE previous iteration of the VelociRaptor SUV was based on the Ford F-150 SVT Raptor, the current one gets its bones from the current-generation F-Series Super Duty. Featuring that truck's styling forward of the B-pillar, the VelociRaptor receives an Excursion-like rear seating

area, including the SUV's split Dutch doors and liftgate glass. Available with either the Super Duty's 6.2L gasoline V-8 or 6.7L Power Stroke diesel V-8, the '16 VelociRaptor should be perfect for your family if your hobbies include pulling tree stumps, blasting across desert landscapes, or hauling 20,000-pound yachts.



FORD TESTS THE 2017 RAPTOR IN THE DESERT

The upcoming '17 Ford Raptor has just completed its initial round of desert testing, with Ford engineers putting the off-road pickup through its paces on a 66-mile route incorporating sandy washes, rutted silt beds, deep-sand hillclimbs, and tight, rocky spaces. The loop also included a large motocross-style jump at the start/finish line, helping Ford ensure its big truck's capability as a temporary air transport.



TOYOTA INTRODUCES NEW DIESELS FOR HILUX PICKUP

The all-new 2.8L 1GD-FTV I-4 turbodiesel in the Toyota Hilux pickup has a claimed thermal efficiency of 44 percent, among the highest of any engine in the world, according to Toyota. Output is 174 hp and 332 lb-ft of torque, with 273 lb-ft available as low as 1,200 rpm. A smaller-displacement 2.4L engine produces 148 hp and 295 lb-ft of torque.

While many of us don't pay too much mind to global-market diesels, these engines should make Americans take notice, as they may show up in the new Toyota Tacoma.



ASTON MARTIN MAY BUILD SUVs IN ALABAMA

Aston Martin previously expressed its desire to have a manufacturing base in North America and inferred it would probably be in Alabama.

The tentative plan to build the company's upcoming SUVs at the plant would involve sending knockdown kits from England to Alabama for final assembly and finish, although full-fledged manufacturing is not out of the question. One of the challenges, according to Aston Martin CEO Andy Palmer, is how to recreate British craftsmanship outside of the U.K.



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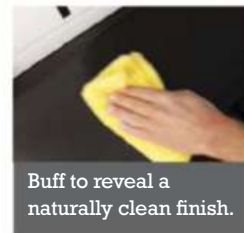
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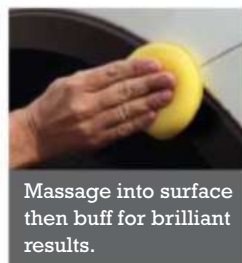


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WHALE WATCHING

G.R. WHALE

We Know It When We See It

Legal scholars may recognize those words from the written opinion of Supreme Court Justice Potter Stewart, likely with input from his clerk Alan Novak, in the 1964 case *Jacobellis v. Ohio*. Stewart asserted he could not define obscenity but would know it when he saw it—both Stewart and Novak had served in the Armed Forces. And for a current, more relevant definition, an automobile dealer has now gone on record as calling fullsize pickup prices obscene.

New Hampshire dealer Chris Weiss isn't calling out a single brand here—he sells both Chevrolet and Ram—but his assessment is accurate. Relatively speaking, New Hampshire is in good shape, ranked as a Top 10 richest state, and only six states fare better on unemployment and only four have more annual per capita income (the highest by far is not a state, it's Washington, DC). And yet, he still thinks pickup prices are absurd.

According to Edmunds.com, the actual paid price of fullsize pickups went up 37 percent from 2004 to 2014, the greatest growth in any of the major vehicle segments and a far bigger increase than cost-of-living and inflation indices. In the last 25 years they've more than doubled, outpacing most housing markets. That makes the average pickup transaction price about \$10,000 more than the overall vehicle market average.

Today, I configured top-trim ½-tons in basic colors, no bed accessories, side steps, 22s, or floor mats. They should have a red carpet at these tabs, with some options, no accessories and no incentives, the average was \$55,990. Only one domestic was less than \$60,000. Like the gun-toting cowboy in *Used Cars* said, "That's just too high."

Tow ratings keep going up and payloads are up for many, but does that justify the cost? Unfortunately there is no escape, since fullsize utes have similarly inordinate prices.

True, a Suburban has more expensive suspension, larger fuel tank, an extra row of power-fold seats, power tailgate, more glass and ventilation, rear wipe/wash, larger airbags, and HID headlamps, but it's \$12,000 more than a pickup. Furthermore, a steel eight-seat Expedition EL with lower tow and fuel economy ratings than an aluminum F-150 is \$5,000 more.

Vans don't fare much better. I quite liked the last Transit I drove (diesel HR LWB EL dually) but that shipping container with wheels, brakes, power, two seats, and A/C was above the \$50,000 mark. So is a similar Sprinter container.

Credit whatever you want for these big-buck truck sales: Utility, construction and energy business, \$3/gallon gas, etc. And leasing: The number of pickups leased rather than bought increased by four times between 2010 and 2014.

While leasing means you don't actually own the vehicle you're paying good money for, it is being used as a way to show a \$55,000 pickup is affordable by providing lower monthly payments, and that's why the manufacturers are subsidizing it. Consider that, with no negotiation and well-qualified buyer status, today I could lease a 2WD V6 mid-level or a high-end 4WD pickup and—this the key if—if the "purchase at lease-end for price agreed upon at signing" matched projected residual value, I could buy it at the 39-month lease end for less total outlay than if I paid cash for MSRP less incentives.

That tells me people succumb to the marketing and want a second car that can tow a trailer they don't have, and the manufacturers want to move these things at not-quite all costs. It all reminds me of how people went upside down with 84-month loans and got carried away with their housing equity. Those aren't good memories, and hopefully the manufacturers and the lenders make this work realistically. **TT**



“ ONLY ONE DOMESTIC WAS LESS THAN \$60,000. LIKE THE GUN-TOTING COWBOY IN USED CARS SAID, ‘THAT’S JUST TOO HIGH.’ ”



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Chicken Tax Expiration

WILL THE U.S. GET MORE IMPORTS?

For those of us in the industry, the term “chicken tax” needs no explanation. But for outsiders, the use of the term in the context of pickup trucks makes little to no sense. So what exactly is this poultry-themed tariff and what does it have to do with trucks? You have to go back more than 50 years to the administration of Lyndon B. Johnson for the origins of the act.

In the early 1960s, the U.S. was the world’s leading producer of poultry, and exports of American chicken to the European markets depressed the price of chicken on the Continent to the point where European farmers were crying foul (pun intended). As a protective measure, several European countries, including France and Germany, levied tariffs against American poultry products. In retaliation, and under pressure from the United Auto Workers, the U.S. slapped a 25 percent tariff on foreign-built vehicles classified as light trucks, which at the time included the pickup and cargo versions of the Volkswagen Type 2 van.

Unfortunately, the collateral casualties were also Japanese-brand pickups, which remained a relatively niche product until manufacturing commenced in the U.S. in the early ’80s, allowing the companies to circumvent the tax. An interesting workaround devised by GM when they were still importing the Isuzu-based Chevy LUV compact truck was to import the trucks without beds, thereby qualifying as parts rather than whole vehicles. A similar type of Byzantine workaround was also in play when Ford imported the first-generation Transit Connect from Turkey as a passenger van, literally shredding the second-row seats and replacing the rear glass with sheetmetal panels when they reached American ports.


With the likely imminent passage of the Trans Pacific

Partnership trade pact, the chicken tax may soon be relegated to the history books. Once the tariff has wound down, some speculate that the U.S. market could be flooded with imported trucks that have heretofore been too expensive to sell in the U.S. in light of the prohibitive levy. Although China, Thailand, and India are not yet official members in the trade pact, they have applied to be part of the free-trade bloc and will likely be the source of many of the trucks coming stateside in the future.

But fears by some that the U.S. truck market will be swamped with cheap imports may be unfounded. First, Nissan and Toyota both have substantial manufacturing footprints already established in the U.S., allowing them to sell trucks domestically at a competitive price point. Prior attempts at importing trucks by Mahindra and ongoing efforts by China’s Great Wall have so far proved fruitless. The Detroit Three have a virtual lock on the fullsize market, leaving the Toyota Tundra and forthcoming Nissan Titan to fight for the table scraps.

And GM’s ambitious pricing on the new Colorado and Canyon don’t seem to have hurt the trucks’ popularity one iota, validating the premise that buyers are willing to pay a premium price for a smaller truck. So should Detroit be worried that outsiders will swoop in and eat their lunch? Not overnight. It will likely take years (if not decades) for cheaper imports to make major inroads in the U.S. market, and the first generation imports from developing nations will likely be crude and built to a price. Those accustomed to the refinement and sophistication of established U.S.-market trucks are unlikely to be tempted.

But never say never. Just as the Korean brands proved, the transition from zero to hero can happen, but it took them the of two decades to move from a used-car alternative to a legitimate head-to-head competitor with established Japanese and American brands. Will the same thing happen in the U.S. market with trucks? Check back again in 2035. **TT**



If the domestically produced Chevrolet Colorado and GMC Canyon do well, it might give Ford some incentive to bring this Ranger T6 mid-size pickup to America. One obstacle? The Ranger is built overseas and would be subject to the chicken tax.

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KICK THE DUST UP

RAM'S REBEL-LIOUS NEW OFF-ROAD PACKAGE

Words and Photos By **Jason Gonderman**



ff-road packages are all the rage these days. With the resurgence of the pickup market has also come a renewed interest in the outdoors and people are hungrier than ever for vehicles that take them off the beaten path. For many, the pickup is merely a conveyance to reach their favorite fishing hole, hunting ground, or trailhead, while for others it is also their primary means of recreation. In either case, however, it also needs to be a reliable weekday work truck, soccer shuttle, and grocery getter since the average American doesn't really have room in the budget for an extra toy these days. Enter the Rebel: Ram's answer to this growing market.

Before we get too deep into what the '15 Ram 1500 Rebel is, let's make clear what it is not. When the announcement about Rebel was





Ram's traditional crosshair grille has been replaced with this Rebel-specific black and gray unit. The ram's head emblems, front and rear, have also been removed in favor of the block-letter "RAM."

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- BOB HEGBLOOM, PRESIDENT AND CEO, RAM TRUCK

FIRST DRIVE

Skid plates over the front bumper, oil pan, front differential, and transfer case keep the underside vitals safe when the trail gets rough. Bilstein monotube shocks front and rear are tuned specifically for the Rebel and are in large responsible for its fantastic ride. If it were up to us, these shocks would be on all Ram 1500s.

first made at the 2015 North American International Auto Show in Detroit, the internet was set ablaze with comparisons to Ford's F-150 Raptor. The folks at Ram are very quick to point out that the Rebel was never intended to compete in the class of specialty pickups that include the Ford Raptor, Ram Power Wagon, or Toyota TRD Pro. These are all specialized limited-production vehicles. Instead, the Ram Rebel falls in line with

Ford's FX4, Toyota's TRD, Chevy's Z71, GMC's All-Terrain, and Nissan's PRO-4X package. With that out of the way we can dig deeper into what really sets the Rebel apart.

Exterior Styling

Part of what makes the Rebel unique is its distinctive styling. Gone from the nose is Rams traditional chrome crossbar grille. Instead, it is replaced with a matte-black unit that is exclusive to Rebel. Branding is handled by bold "RAM" lettering placed across the grille and tailgate. Below the grille is a powdercoated steel skid plate and large recovery hooks. The Sport hood adds to the aggressive looks while fog lights, premium projector headlamps, and LED taillights keep the darkness at bay. The Rebel can be had in five colors including Flame Red, Brilliant

Black Crystal, Bright White, Granite Crystal Metallic, and Bright Silver Metallic. Two-tone paint comes standard with Brilliant Black Crystal rocker panels; however, the truck can also be ordered monochromatic. When ordering a Rebel your cab choice is limited only to a crew cab with a 5-foot, 7-inch bed.

Interior Accoutrements

Moving inside, the Ram Rebel has been outfitted with a youthful and sporty interior. The Rebel-exclusive black cloth seats feature distinctive red and gray accents and stitching, along with a "tire-tread" embossed treatment on the seat's center insert. Touches of red on the door panels, center console, instrument panel, and radio bezel tie the whole theme together. The finishing touch is the unique Rebel-themed background displayed on the

The black-and-white color scheme gives the truck a Stormtrooper vibe, but the kill count of craft directly beneath the Rebel badge that this particular Ram and its owner has hints the Ram has no love for the Empire.



Aggressive 33-inch Toyo Open Country A/T tires provide the traction for Rebel while unique silver and black 17-inch wheel ensures that you stand out from the crowd. Don't let the look fool you; these tires are just as good on the highway as off of it.

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Under the hood of our Rebel tester was the 395hp 5.7L Hemi V-8. Also available is the fuel-sipping 25mpg 3.6L Pentastar V-6.

available 7-inch instrument cluster screen at start-up and on the available 8.4-inch touch-screen radio.

Under The Skin

Rebel finds its motivation from either the 3.6L Pentastar V-6 or 5.7L Hemi V-8, and both are mated to an eight-speed automatic transmission. The 3.6L engine churns out 305 hp and 269 lb-ft of torque, and it is only available on four-wheel-drive models with 3.92:1 axle gears. For those seeking more power than economy, the 5.7L Hemi lays down 395 hp and 410 lb-ft of torque. The Hemi can be optioned into both two- and four-wheel-drive models and either 3.21:1 or 3.92:1 axle gears. Sorry folks, there's no EcoDiesel option—at least for '15.

The Rebel's trail-running capability gets a boost with a 1-inch taller ride height than a standard four-wheel-drive 1500, which provides improved approach, departure, and breakover angles. Air suspension is standard on the Rebel, and specially tuned Bilstein mono-tube shock absorbers keep the Rebel under control over rough terrain. A softer rear

stabilizer bar and slower steering calibration both aid in improving off-road handling.

Beefy 33-inch (285/70R17) Toyo Open Country A/T all-terrain tires are mounted on new 17-inch silver and black cast-aluminum wheels. The tire's aggressive tread pattern offers outstanding traction when the trail gets tough, while remaining quiet enough for weekday highway duty.

Behind The Wheel

We were recently afforded the opportunity to hop behind the wheel of a Rebel that belongs to a member of Ram's design team and take it for a spin in the woods of Michigan (at the

2015 Ram 1500 Rebel		
VEHICLE TYPE: Five-passenger pickup		
BASE PRICE: \$42,790		
PRICE AS TESTED: \$46,370		
ENGINE: 5.7L Hemi V-8		
power 395 hp	torque 410 lb-ft	trans TorqueFlight 8 auto
EPA FUEL ECON: 15 city / 21 hwy		



Unique red stitching and anodized accents liven up the mostly black interior, giving the Rebel a mean mien.

time, only about a half-dozen pre-production units even existed). Traveling on paved roads you'd have no reason to believe that you were in anything other than a run-of-the-mill Ram 1500. Acceleration, braking, and handling are all as you would expect, despite the large and aggressive off-road tires and taller-than-normal ride height. If it weren't for the bright-red anodized vent surrounds and steering-wheel stitching, as well as the "Rebel" logo on the glove box, you'd have no reason to think you were in anything but a Ram 1500 SLT.

When we left pavement in favor of something a bit more rugged is where the Rebel really started to shine. There's no kidney belt required for this pickup. The Bilstein shock tuning is spot on, and the truck remained stable and in control running down rutted roads and two-track, while our spine remained in proper alignment as well. Combining the impeccable shock tuning with the Ram's link-coil rear suspension and air springs provides a very smooth and controllable ride, provided you don't try and over-drive the truck (remember, it's neither a Raptor nor a Power Wagon).

The truck we were driving was a Hemi four-wheel-drive model, so it had plenty of power for climbing hills and throwing up roost. Traction from the Toyo tires is fantastic, however the Hemi engine has no problem burying the truck to the frame in loose dirt while in two-wheel drive. With the suspension raised up to Off-Road Two mode the ride gets a bit firmer, but remains overall better than the standard Ram 1500. We did encounter one spot where the breakover angle was too great for the truck and we had to back out. However, if we owned the truck, we would have just given it a little throttle and slid the frame over the obstacle.

While our time with the truck was short, it was enough to convince us that Ram has a real winner on its hands with the Rebel. It carries a youthful spirit, aggressive attitude, and docile manners. Ram has managed to find the perfect blend of highway comfort and off-road capability. Expect to see Rebels on a trail near you soon! **TT**

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EXCLUSIVE

THE BOSS

Words and Photos By **Jason Gonderman**

Building on the success of the all-new '15 Colorado, Chevy has begun introducing special editions of the vehicle, which cater to a consumer's desire for a customized ride that fits their unique personality. It all started with the '15 Colorado Z71 Trail Boss, and the company has wasted no time in introducing us to the updated '16 Trail Boss (along with the Midnight edition for the more street-oriented crowd—more on that next issue). With lots of smooth talking and bribery, we were able to get our hands on the only '16 Trail Boss in existence. (Don't

worry; they assure us that more will be built soon.)

The Trail Boss is built off of Chevy's legendary Z71 off-road package and adds unique features that improve both appearance and functionality. It is offered in extended and Crew Cab configurations, with the choice of a long (6-foot, 2-inch) or short (5-foot, 2-inch) bed. It can also be had in two-wheel or four-wheel drive, and with the 2.5L I-4, 3.6L V-6, or the 2.8L Duramax diesel engine. Unfortunately, the only drivetrain option *not* available is the manual transmission, which, to us, is unacceptable (but understandable).

At its base, the Z71 off-road package adds a G80 automatic locking rear differential, off-road suspension with twin-tube shocks, all-terrain tires, front recovery hooks, hill-descent control, a transfer case skid plate, fog lights, and projector headlights. Checking the Trail Boss box on the order form cranks it up to 11. Black 3-inch round rocker steps provide an aggressive look, help with ingress, and protect against rocker damage on tough trails (though Chevy doesn't officially claim that last part). However, we found the steps to be a bit of nuisance when getting out of the truck. Also part of the Trail Boss package is black

Black fender flares and body-colored bumpers contribute to the unique look and stance of the Trail Boss.



WITH LOTS OF SMOOTH TALKING AND BRIBERY, WE WERE ABLE TO GET OUR HANDS ON THE ONLY '16 TRAIL BOSS IN EXISTENCE.

Goodyear Wrangler DuraTrac tires provide the grip necessary to keep the whole operation moving forward when the trails get tough. These tires, while on the more aggressive end of the all-terrain spectrum, are actually quite smooth and quiet on the pavement.



fender flares, black Bowtie emblems front and rear, a spray-on bedliner, and all-weather floor mats with the Z71 logo. Adding functionality to the Trail Boss are aggressive 265/65R17 Goodyear Wrangler DuraTrac all-terrain tires wrapped around custom black 17-inch wheels. A sport bar is mounted in the bed and holds a pair of LED off-road trail lights for those times when your adventures last well past the sun's quitting time.

From behind the wheel, the Trail Boss drives just like any other Colorado. The Z71 suspension is soft enough for comfortable daily driving, yet tuned just right for the



A pair of 3-inch round side steps is included to provide assistance in entering and exiting the pickup, along with enhancing the rugged look.



mild trails that it's intended for. We bombed around on some simple dirt trails, graded roads, and tore-up two-track, and the Trail Boss handled them phenomenally, only occasionally bumping the air dam into the trail (we're keeping our fingers crossed for a removable version on the next Trail Boss). The Goodyear Wrangler DuraTrac tires are a great addition to the truck and provide enough traction to get you deeper in trouble than you probably want to be. We're still annoyed that the transfer case selector is hidden behind the steering wheel and easily confused for the headlight switch, but its operation is quick and easy once you find the knob.

Overall, we're extremely pleased with the direction that Chevy is headed with the Colorado Z71 Trail Boss. This truck provides a quick and easy way to get outdoors in a

New for '16 is the bed-mounted sports bar. Aside from adding to the unique look of the Trail Boss, this bar also serves as the mounting location for a pair of LED trail lights.



Unique to the Trail Boss and Midnight Editions are blacked-out Chevrolet Bowtie emblems.

pickup that has excellent looks, loads of capability, and is completely covered by the factory warranty (and financing). And the fact that the '16 model has been introduced so quickly after the '15 went on sale, and with even more content than before, reinforces their commitment to this lifestyle. While we're excited for the '16 Trail Boss, we're even more interested in what the future holds! **TT**

2016 Chevrolet Colorado Z71 Trail Boss

VEHICLE TYPE: Five-passenger pickup

BASE PRICE: \$29,000 (est.)

PACKAGE PRICE: \$6,401

ENGINE: 3.6L V-6

power @ 6800 rpm
305 hp

torque @ 4000 rpm
269 lb-ft

trans
6 auto

EPA FUEL ECON: 17 city/24 hwy

THE ANTI-MIDLIFE CRISIS



THIS SPICE GIRL GETS EVEN HOTTER

By **Sue Mead** • Photos Courtesy of Porsche

In San Diego, rush-hour traffic is never easy. However, the vehicle I was test driving along the bustling freeways of southern California made it as palatable as it could be until I could shed the city and head for the hills, where snaking tarmac two-lanes beckoned. I've been enamored with the Porsche Cayenne since it first came to market in 2002 as an '03 model. The first V-8 engine built by Porsche since 1995, when the Porsche 928 was discontinued, powered this midsized luxury crossover marketed by the German marque known for exhilarating sports cars.

I remember my first drive in the '03 Cayenne like it was yesterday. We started on a racetrack, where I was in a state of blissful shock when I hit three digits on the tarmac. The SUV handled like a sports sedan, hugging the corners with no head toss or body roll! Next, it was on to an genuinely rugged four-wheel-drive trail, where the Cayenne's performance

was flawless and beset with some *Star Wars* technology like Hill Hold (a system that was novel at the time), great off-road grunt and growl, and enough ground clearance to roll over ruts and rocks.

The Cayenne was built to meet the growing demand from high-end buyers who wanted it all and especially Porsche owners that wanted

a vehicle with sporty looks, crisp handling, and invigorating power that would make their hearts race. But, at the same time, they needed enough space for a family and all of their assorted gear and a healthy dose off-road capability, in case it might ever be called into service. Enter the Cayenne—an anti-midlife crisis car! An SUV that allowed its owners to



The Porsche Cayenne S E-Hybrid plug-in is no eco-weenie, with 416 combined horsepower from its supercharged V-6 and electric motor. The pepper-red leather seats further the SUV's sporty mien.



Designers took a few pages from the new Macan's styling handbook by adding enlarged air intakes on the front bumper, a rear spoiler, and LED daytime running lights across the entire model range. Additionally, the height of the rear tailgate has been raised, allowing the quad-exit tailpipes to be integrated into the lower valence of the rear bumper. These tasteful alterations give the newest Cayenne a wider and more anchored stance on the road, a significant improvement to the overly generic and rounded-off styling of the pre-facelift model.

The interior remains largely unchanged, save for some added bolstering in the rear seats, as well as an elegant updated three-spoke sport steering wheel. The metallic wheel mimics the three-spoke in the 918, a reminder of Porsche's sporting ancestry when you're at the helm.

The new Cayenne will launch in the U.S.

with four different versions, down from the previous model year's stable of seven. All Cayennes are equipped with adjustable air suspension for better ground clearance, as well as three different selectable modes for the adjustable PASM suspension and traction control to help you tackle a myriad of surfaces, wet or dry. The Cayenne S, Diesel, and Turbo models also receive added off-road capability through an electronically controlled variable rear differential with Porsche Torque Vectoring Plus. This system allows all of the differentials to be fully locked for serious four-wheel-drive traction. Combined with the virtual overhead view generated by the new-for-'15 optional Park Assist system, driving off road is an almost video-game-like experience.

The '15 Cayenne is a fast Porsche that will carry your family, your dog, and your gear. Plus, it goes off-road! How spicy hot is that? **TT**

maintain the professional appearance of adult responsibility, while still retaining the ability to make their hair stand on end motoring a twisty ribbon of road or skirting through rush-hour traffic!

We drove two models of the newest Porsche Cayenne that has been updated with more power, improved handling, greater comfort, upgraded driver-assistance systems, and improved efficiency. Leading this effort, the '15 Cayenne S E-Hybrid premieres as the world's first luxury SUV with a plug-in hybrid drive, while the '15 Cayenne S gets a 3.6L twin-turbo V6 engine that replaces the 4.8L naturally aspirated V-8 engine. The other available engines have been upgraded as well.

Another of Porsche's main goals was to give the Cayenne a more aggressive look, penned to better suit its sporty personality.

Our tester was equipped with the Sport Chrono package, as denoted by the center-mounted stopwatch high on the dashboard.



The new XC90 comes at a critical time for Volvo, being the first all-new XC90 in more than a decade, as well as coming to market amid rising global demand for luxury crossovers.



SCANDINAVIAN SANCTUARY

VOLVO LAUNCHES ITS NEWEST LUXURY-MOBILE

When Volvo introduced its first-generation, midsize sport utility vehicle in 2002, there was a sea of SUVs in the U.S. market. What made this new entry stand apart in the premium segment was its svelte Scandinavian design, moderate price, and world-class safety features that could even withstand hitting a moose. In the ensuing years, the XC90 has had a few facelifts, engine upgrades, and other updates, and more than 250,000 buyers in the U.S. have purchased it. Even so, the first-gen model was getting long in the tooth, and we've been wondering when a new version would come to market,

By **Sue Mead** • Photos Courtesy of Volvo

especially since China's Geely Automotive Holding Company now owns Volvo's car's division, with a goal of selling the crossover in the burgeoning Chinese market.

We'll tell you the newest "Scandinavian sanctuary" is luxury-filled and adorned with an Orrefors crystal gear shift and a diamond-cut volume control knob; boasts cutting-edge and futuristic active and passive safety technology; and has a host of new in-car technologies, including the new Sensus infotainment system, with a 9-inch tablet-like touchscreen located above the center console

as its crown jewel. The new XC90 will come in three versions and three trims, but all are all-wheel drive and shifted through eight-speed automatic transmissions. A sill-plated and numbered First Edition was designed with a unique trim to honor the year this Swedish carmaker was founded in 1927, but if you didn't order one last year within 47 hours of it going on sale, you're too late—The 1,927 individually numbered cars sold out less than two days after orders opened on September 3, 2014.

Volvo says its new drivetrains provide



class-leading fuel efficiency and power. The standard T6 Drive-E 2.0L I-4 is supercharged and turbocharged for 316 hp and 295 lb-ft of torque. The supercharged and turbocharged T8 adds an electric motor to the rear axle, for a total system output of 400 hp and 472 lb-ft of torque. It is also world's first seven-passenger plug-in hybrid electric vehicle and has a 17 mile electric range and a fuel economy of 59 MPGe city (preliminary). The T6 is rated at 20 city/25 highway/22 combined and has a top speed of 130 mph, while the T8 can scoot from zero to 60 mph in 5.3 seconds, an impressive feat for a 2½-ton vehicle.

We drove both T6 and T8 models and found both versions to be luxury-mobiles with pleasing drive qualities, with plenty of power on tap, great brakes, and impressive dynamics from the five suspension settings, including a sport mode. Driving in the T8's Pure mode, we experienced great, quiet power but heard a slight spool-up noise when the audio system was off. The optional air springs and adaptive dampers that eliminate the rear leaf spring enhanced its comfortable and responsive ride.

We found the cabin to be one of the best in its class, and despite being laden with at-hand technologies, it is sanctuary-like with sumptuous materials and surfaces and large panoramic glass. Sensus has an intuitive

layout for today's tech-savvy consumers; it has access to cloud-based apps including Internet radio, connected navigation, parking, music streaming, and iOS and Android device compatibility for the touchscreen display. Sensus also makes the XC90 a Wi-Fi hotspot. The top-level audio system is a 1400-watt Bowers & Wilkins setup, with 19 speakers and some of the first air-ventilated subwoofers in a car.

Overall, the '16 Volvo XC90 is a fine SUV. Its powertrain technology, safety features, and interior comfort are all on par with competitors, and it offers a very pleasant driving experience. We can't wait to spend more time in one in the near future. **TT**



The '16 XC90 brings a new level of sophistication to Volvo interiors, with an available Orrefors crystal shift knob and elegant Swedish design.



2016 Volvo XC90

VEHICLE TYPE: Premium Crossover SUV

BASE PRICE: \$48,900

PRICE AS TESTED: T6 AWD Inscription: \$66,705

ENGINE: 2.0L I-4, supercharged and turbocharged

power 316 hp	torque 295 lb-ft	trans 8 auto
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FUEL CAPACITY: 18.8 gallons

EPA FUEL ECON: 20 City / 25 Highway / 20 AVG

CURB WEIGHT: 4,627 lbs



DESERT HEAT



THE ALL-NEW TUCSON IS **HOT!**

By **G.R. Whale** • Photos by G.R. Whale and Courtesy of Hyundai

This is the '16 Hyundai Tucson. Pick any adjective and add "er"—It's longer, wider, and lower and offers more power, better EPA ratings, and more safety features, with styling fits the Santa Fe mold per corporate policy. If you poke around, you won't find anything to suggest they couldn't make a unibody pickup out of it like the old Rabbit, Rampage, or Brat.

Wheelbase is up by 1.2 inches and overall length by 3, yielding a package that's typically more wheelbase, less overhang, wider, and lower than primary competitors. Styling echoes the larger Hyundai crossovers and carries large wheel arch plastic frames, smaller glass-to-panel proportions, wheels up to 19 inches, and a more upright windshield more appropriate to a pickup.

It's a lot more rigid too, with Hyundai claiming it's 48 percent stiffer with a big bump in high-strength steel and reinforce-

ment panels at many suspension hard points. That rigidity works well with the new rear suspension—dual lower links and revisions to antiroll bars, geometry, bump stops, subframe mounts, and Sachs shocks to deliver a firm, yet compliant, ride, even on generous 245/45R19s (which knocks 2 mpg

off the combined fuel rating compared to the Sport and Eco's 17s) and gravel roads.

Both engines are undersquare, all-aluminum, twin-cam direct-injection units. The 2.0L naturally aspirated "Nu" engine is offered only on base SE models with a six-speed automatic. The second engine offering is a turbo-



The interior of the '16 Tucson takes a decisive step upscale with higher-quality materials and the latest generation of Hyundai's BlueLink system.



The available approach-activated liftgate reveals 31 cubic feet of cargo space with the rear seats up and 62 cubic feet folded.

a CVT. Under near-ideal conditions we posted 30 mpg on a gently rolling two-lane.

Hyundai's dual-clutch transmission rolls off smoothly for the most part—only uphill reversing caused some of the jerkiness some dual-clutches exhibit. It shifts seamlessly but not as quickly as other dual-clutch units we've driven, whether up or down, manual or automatic. Although it has seven speeds, the emphasis is still economy as it runs to about 65 mph in second.

Tucson offers three drive modes: Normal, Eco, and Sport, selected by a button aft of the shifter. They do just as you'd expect, including adding more effort to steering rather than feel, but Sport isn't particularly aggressive, and we'd wager few owners would ever select it.

Naturally it's packed with thoughtful features that vary by trim: The cargo cover can be mounted for reclining rear seats or stowed

charged 1.6L with seven-speed dual-clutch. The 1.6L is stronger than the 2.0L in every regard, idles quietly, and falls off passing 6,000 rpm, 400 short of the 2.0L's peak. We won't say there's a surfeit of power, but it gets the job done, and at full tilt, the 1.6L's dual-clutch transmission feels quieter and equally potent compared to the more-horsepower CR-V with

2016 Hyundai Tucson

MSRP: \$23,595-34,945

FUEL CAPACITY: 16.4 GALLONS

ENGINE: 2.0L DOHC 16-valve, I-4

power @6200

164 hp

torque @ 4000

151 lb-ft

trans

6 speed auto

EPA FUEL ECON: 21/26/23

ENGINE: 1.6L DOHC 16-valve, turbocharged I-4

power @5500

175 hp

torque @1500-4500

195 lb-ft

trans dual-clutch

7 speed auto

EPA FUEL ECON: 26/33/29

SUSPENSION (F/R): MacPherson strut, antiroll bar / multilink, coil springs, antiroll bar

BRAKES (F/R): 12.0-in vented disc / 11.9-in solid disc

STEERING: Electric-assist rack & pinion

WHEELBASE: 105.1 in

TRACK (F/R): 63.3/63.8

LENGTH/WIDTH/HEIGHT: 176.2/72.8/64.8 inches

GROUND CLEARANCE: 6.4 inches

WEIGHT: 3,325-3,710 pounds

MAX TOW RATING: 1,500 pounds

under the bi-level load floor; the big moonroof shade is opaque; SiriusXM is standard and you can replay if you miss the beginning of a favorite tune; a locked hatch that opens as you approach; a cargo capacity of 31 cubic feet with the seats up (62 cubic feet with them folded); a BlueLink telematics suite with Apple and Android smartwatch apps; and blind-spot warning with lane-change assist and full-stop, automatic emergency braking with pedestrian detection. LED headlights come on the Limited, but the Ultimate trim swaps them for curve-illuminating swiveling HIDs.

On straight-up price comparisons, the Tucson may not appear the big-value player Hyundai's history suggests, but it includes bits competitors might not. And while the Tucson will sell on its styling, cabin, and fair level of refinement, it still carries that impressive warranty. **TT**





By **Sue Mead** • Photos Courtesy of Honda

HONDA'S ALL-NEW 2016 PILOT

A NEW WAY TO FLY

The '16 Honda Pilot isn't simply updated—it's all new. The third-generation crossover has been reskinned outside and in and has been re-engineered with driving dynamics that make it very different from its predecessor. Driving the highly regarded second-gen '15 Pilot back to back with the '16 Pilot sealed the deal, and its transformation became stunningly apparent. On sale now, the eight-passenger family SUV has been redesigned with changes led by the voice of the customer, says Honda, with fresh styling, many of the car world's latest features, increased value, and improved fuel economy. Honda's flagship three-row sport utility is developed and manufactured in the U.S.

The newest Pilot raises the bar with a more premium attributes, new powertrains, and a host of new technologies, along with the more advanced safety features. Although the newest Pilot is larger and longer, it has shed some weight as well, which aids fuel consumption

and improves driving dynamics. It's been penned with a more sporty, sleek, and narrow look with styling that is more contemporary than the previous model's boxy and upright lines, sharing cues with the Ridgeline truck. The new model blends slightly muscled looks with sculpted panels and narrower window openings along the side for smoothing that makes it more aerodynamic; a spoiler at the

tail reduces drag. LED lighting punctuates the front and back, while a bright-chromed three-bar grille accents the fascia.

Under the hood is Honda's Earth Dreams Technology 3.5L V-6 engine with cylinder deactivation technology that produces 280 hp and 262 lb-ft of torque and a stop/start function aids in fuel efficiency. It is matched to a new six-speed or nine-speed automatic, depending on trim. The nine-speed can be operated in two different fully automatic modes: D mode is for normal driving and top fuel economy, while the Sport mode is for more spirited driving. A new push-button-operated Intelligent Traction Management System brings four different AWD operating modes (Normal, Snow, Mud and Sand) and two FWD modes (Normal and Snow.)



The '16 Pilot's 3.5L direct-injected V-6 is shared with the Acura MDX. In this application, it produces 280 hp and 262 lb-ft of torque.



2016 Honda Pilot

VEHICLE TYPE: Mid-sized crossover SUV

BASE PRICE: \$29,995

PRICE AS TESTED: \$46,420

ENGINE: 3.5L EarthDreams V-6

power

280 hp

torque

262 lb-ft

trans

9 auto

FUEL CAPACITY: 19.5 gallons

EPA FUEL ECON: 19 City / 26 Highway / 22 AVG

CURB WEIGHT: 4,303 lbs

The Pilot is all-new inside and out, with a much more contemporary look and function. The unusual shifter module for the nine-speed automatic is a cluster of buttons and switches on the console.

We drove the different versions of the new Pilot in a small quadrant of Ohio and Kentucky, with city driving, freeways, and winding two-lanes. Notable attributes are the Pilot's quietness; tighter, more responsive steering; and power that moves it quickly when needed. The six-speed shifts smoothly but engine noise is more apparent, and it lacks the shift sophistication of the nine-speed gearbox. We also enjoyed the paddle shifters on the nine-speed transmission, along with Pilot's responsive Sport setting.

Of note, the new AWD system not only

transfers power from the front to the rear, but also across the rear axle, at the hands of a more sophisticated traction-enhancing technology. A Hill Start Assist system maintains brake pressure when the pedal is released, giving the driver time to engage the accelerator. A Grade Logic System holds the engine in a lower gear when on inclines for better hillclimbing torque and increased engine braking when going down steep hills. The second-generation all-wheel-drive system enables it to wade through up to 19 inches of water. **TT**



PILOTING HONDA'S FUTURE

MARC ERNST

LARGE PROJECT LEADER

Born in South Bend, Indiana, Marc Ernst grew up in Maryville, Missouri, home of Northwest Missouri State University. "But I wanted to see the world," he says. "So I applied to universities almost as far away as I could get: Princeton on the East Coast, Stanford on the West Coast."

He chose Stanford and mechanical engineering. And excited about the possibilities, but undecided on which area to pursue, he stayed for a Masters degree. "That was when I was exposed to automotive engineering," he relates. "I did a year-long project for General Motors, then a summer with Ford, and developed a real love for the auto industry."

Graduating in 1989 and seeking to add artistic and creative aspects into auto engineering, he took an opportunity with Honda to train in research and development in Japan for two years, then return to expand Honda's U.S. R&D capabilities. "The first year was mostly training in vehicle development, primarily suspension—deciding on chassis specs and layout, then tuning and development. The second year was mostly simulation activity, developing new ideas



for vehicle-dynamics simulations to make development more efficient."

Returning in 1992, he established Honda R&D America's suspension and steering development groups in Raymond, Ohio. "I was the beginning of the group, along with one Japanese member," he says. From that modest beginning, Ernst has risen through increasing responsibilities to his current position as Large Project Leader (essentially chief engineer) for the '16 Honda Pilot SUV.

TT: Did you have test facilities there in 1992?

ME: We had no facilities for confidential testing, so this Japanese member and I had to test on public roads when it was dark. In the summertime, we would write reports and things during the day, then start testing about 10 p.m. and go until 3 a.m. We were right next to the Transportation Research Center (TRC), but it wasn't very confidential because a lot of the fencing didn't exist. We still use TRC, expanding and advancing the courses there as we need, and it works pretty well. We also go out on public roads to confirm configurations.



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The styling of the 2016 Honda Pilot reflects changing consumer tastes looking for a sleeker, more sophisticated design.



“...BUT AFTER THEY’VE DROPPED OFF THE KIDS, THEY WANT A STYLISH PERSONAL VEHICLE.”

What is your product philosophy?

Honda’s DNA is about safety, fuel efficiency, quality, and balancing the package. We really try to understand our customers to make sure we give them what they want. It starts with understanding the market, talking with customers who own Hondas or competitive products, to learning what their wants and needs are and going to see them in their actual situations. Part of the Honda philosophy are the “three actuals:” go to the actual location and see the actual parts and how they are actually being used. You don’t just do this from your desk.

And for this new Pilot?

We’ve really thought about its evolution through two previous generations. The first-generation Pilot was one of the first unibody SUVs, with great body rigidity, independent suspension, car-like handling, and a very useful package. But some didn’t see it as a real SUV, since the big-sellers at the time were body-on-frame truck-based vehicles. The second generation was targeted to show rugged utility, off-road and tow capabilities,

and whatever else you wanted it to do. It had a rugged, capable look in both styling and packaging.

For this third-generation, there was a customer migration toward more quality and luxury, with sleek, modern styling. They want the utility of a family vehicle, but after they’ve dropped off the kids, they want a stylish personal vehicle. So we wanted it modern and stylish without giving up any capability. We



did a lot with the powertrain and all-wheel drive to not just keep, but enhance, its capabilities.

Does it have competitive advantages?

Safety is a big deal, and that starts with the body. We designed it with extensive use of ultra-high-strength steel and lightweight materials like aluminum and magnesium and optimized it for amazing safety capability in all third-party test modes and any other safety situation. We’ve developed amazing crash-test simulation capability here and back that up with actual testing. It’s also a very lightweight body for great fuel economy.

One big thing we learned for the new IIHS small-overlap test is how important what the front wheel does is for managing the load path to absorb the energy of that crash mode. If the wheel gets trapped and transfers the entire load directly through, it establishes that load path. But if it comes completely off, it changes the load path and how to absorb the energy. So it’s managing what that wheel does, then managing all that energy to minimize the impact and protect the customers.

Do you get a lot of direction and oversight from Japan?

This vehicle is almost completely a U.S. development. We communicate and coordinate with Japan, but all of the engineering and development is done here. The Pilot is sold in a lot of countries around the world, and as part of that three-actual philosophy, if we’re selling it in Latin America, Mexico, Canada, Russia, Korea and the Middle East, we go to those locations to see how those customers use their vehicles and understand what they really want. That has led to specific developments for those markets that we learned by going there.

You can’t optimize vehicle development in labs and computers. You really still need to do it in vehicles.

I completely agree. You have to drive the car and do the feeling by feel—You can’t completely depend on simulation. In past programs, we’ve built development vehicles with prototype parts from prototype suppliers, then reverified with tooled, mass-production parts. But now our simulation capabilities have gotten good enough that we’ve eliminated most of that prototype stage. Because we have confidence in our simulations, we go straight to testing with mass-production parts but still have to physically verify and confirm, and maybe have to scrap, some mass-production tools when we learn something new. **TT**

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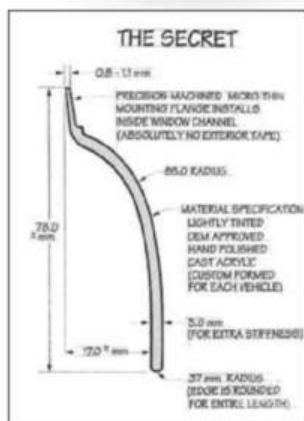
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"There's the flag!" shouted Shennen, my co-driver/navigator on the Gazelle Rally. I followed the direction of her pointed finger and saw a small, triangle-shaped patch of red waving across the top of a rolling series of small sand dunes in the distance. "How much time do we have?" I yelled, as I turned the Sprinter on a direct course and mashed the throttle. "Four minutes," she answered and added, "we can do it!"

It was eighth day of the 2015 Rallye des Aïcha Gazelles and the second day of a two-day-long marathon stage for Shennen Marschner, a Sprinter sales rep for Mercedes-Benz, and I. It had been 20 hours since we clocked in at Check Point 4 the previous day, and we began to search for Check Point 5, which was a short distance of 11 kilometers from our position. We planned to meet the three other Mercedes-Benz teams there and spend the night under the stars, along with

SPRINTER THE SAHARA



THE 2015 RALLYE AÏCHA DES GAZELLES

By **Sue Mead**

Photos Courtesy of Daniel Mayfield and Nicole Dreon



The Rallye des Aïcha GAZELLES has been running since 1990, bringing all-female teams together in the Moroccan desert to compete for off-road glory.





Daimler's Thomas Konzelmann, who was the overseer of the rally teams and had flown into the Sahara to tent out with the teams and offer support. Instead, Marschner and I camped for the night locked in our van somewhere in the vicinity of the Algeria border, sleeping on a plywood makeshift bed atop of our tools and gear, after motoring for a number of hours trying to find the checkpoint and getting lost in the inky black of night in the largely unpopulated remote desert.

Now, after spending hours of the morning still trying to locate this elusive checkpoint, it was within sight but due to close at 13:30 military time. This was my highlight of the rally, not simply because we made it by 30 seconds but because of the Sprinter van's prowess motoring over sand dunes that no FedEx driver would even consider, no matter how precious their cargo. The eyes-wide look on the faces of the four rally support personnel preparing to close the check point said it all, as we came to a halt on the final dune but within the 20 meters required to hit the mark! It was clear they couldn't believe we had made it, but after motoring this multiple-use

van during training in Southern California's deserts and over a wide array of terrain on the rally, I knew its incredible prowess.



Clockwise from top left: The Rallye is open for all women from ages 18 to 65. WRC co-driver Chrissie Beavis tells viewers about her experience with the Gazelles. Detailed mapping and route planning is important when you're taking a full day to travel just 6 miles. "Trailside" adjustments may be necessary. At the end of each stage, the Gazelles prepare their vehicles, relax, and break bread together.



If driving 11 kilometers seems short and finding a flag-marked checkpoint in the midst of varied and difficult desert topography seems easy, I challenge you to take on this off-road rally called the toughest all-women's sporting event in the world. I know off-roading and I know and love tough, but having just completed the 25th-annual run across southern Morocco's landscape using only a compass, plotter and ruler, and black and



"WE GOT GOING PRETTY FAST YESTERDAY, AND THEN WE WERE LIKE 'ARE THOSE ROCKS MOVING' AND FOUR CAMELS STOOD UP."

—Alyssa Roenigk, Crossover Class Winner

white maps that date from the '40s to '60s to find a series of checkpoints each day for nine days that averaged 14 hours of non-stop driving and navigating, I agree!

I was honored to be asked by Mercedes-Benz to drive their new four-wheel-drive Sprinter van. We took on the challenge as a two-person team along with 158 other groups representing 33 countries. The goal: To achieve the shortest distance between the checkpoints, which are designated as either latitude/longitude or distance and heading, rather than speed. The contest measures precise navigation and driving skills, as well as vehicle competence, with no outside assistance or support teams during the competi-

tion. This year's event marked the first time that the rally included an "expert" division in the four-wheel-drive class.

I've motored the world's longest and hardest off-road races, driven sections of numerous around-the-world slogs for automakers showing their vehicle's prowess, as well as been on a number of driving teams that have completed record-setting events. However, I have never encountered a rally the likes of the Gazelles, nor participated in a competitive motoring event that is "women only." My rides have included a Hummer; Porsche-powered, open-wheel buggies; a diesel-powered Ford Excursion; and a motley collection of off-road-prepared rigs. But a stock four-wheel-drive high-roof Sprinter van was never a model in my wheelhouse. However, its charms and talents wowed the four teams (two from the U.S. and two from Germany) that competed in the Crossover Class—two in the Sprinter and two in the European midsize Vito van—and placed First, Second, Third, and Fifth in this class after approximately 1,500 miles of rugged motoring!

The U.S. fielded 10 teams—the greatest number ever. The female competitors representing the red, white, and blue not only drove away with a class win but also two



Author Sue Mead (right) and teammate Shennen Marschner, from Mercedes-Benz USA, pose for a photo.

first-time-participation prizes, four teams that ranked in the Top 25 of the 4x4 class, and the first team to participate in the Quad/Moto/SSV class. Chrissie Beavis, of San Diego, and Alyssa Roenigk, of Los Angeles, took top honors in the Crossover category, one of the four classes. Teams included women with backgrounds that ranged from a Hollywood stuntwoman to a Dakar class winner, former Wall Street trader, Los Angeles producer, and stay-at-home moms. **TT**

The Gazelles from the U.S. celebrate a successful 26th annual Rallye. We came away with a new appreciation for the Sprinter 4x4's prodigious off-road talent.





Words and Photos By **Jason Gonderman**

OUT OF THE STONE AGE

MODERN ENTERTAINMENT FOR AGING PICKUPS

When Alpine first introduced us to their newest creation, the stunningly large 9-inch X009 head unit, we were in awe.

With new functionality such as customizable shortcuts, dual-zone video control, 3D navigation, HDMI input, built-in HD radio, support for Pandora, and much more, we immediately knew this was the perfect solution for pickup owners who wanted the high-end infotainment system without all of the other assorted package nonsense. Additionally, Alpine offers Restyle kits for all of the major truck brands

that include new dash trim to accommodate the large screen. Trouble is they only go back to about '09.

Some studies suggest that currently the average truck owner will keep their pickup for between 8 and 11 years. Case in point: our '07 Ford F-150. Nearing eight years old and with a tick over 100,000 miles on the odometer, it's had a good life but still has a lot left in it at the same time. Not wanting to be left out of the technological advancement of the past decade—and certainly not ready for a new truck payment—we asked Alpine if they had a solution for the people with a pickup just

one generation older than the X009 allows. Fortunately they do with the X008u.

The X008u takes their legendary 8-inch AVN screen and combines it with the features of the new X009. Alpine also offers a Perfect F.I.T. integration system, much like the Restyle kits for the X009 units, for 35 different applications.

So if you are one of the millions that is keeping your truck for the long haul but would love a touch of modern, this is the place to start.

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1

1 Alpine is a leader in the aftermarket infotainment business, and with the OEMs cranking out such good units these days, they have really had to stay ahead of the curve. This is where the X008u and X009 head units come in to play. These are the latest and greatest 8-inch and 9-inch displays from Alpine. If you're like us and didn't opt for the high-level factory trim package with its associated premium audio, these are designed to replace your boring OEM unit.



2



3



4

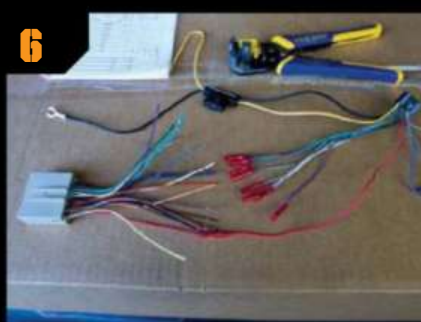
2 Our test truck for this project was your run-of-the-mill '04-'08 Ford F-150. Ford didn't start offering navigation from the factory for these trucks until '08, and SYNC didn't come along until '09. This means there are potentially millions of trucks (Ford was selling an average of 770,000 F-150s a year during this time) that could benefit from this upgrade. Unfortunately the 9-inch X009u won't fit in the space provided. However, the 8-inch X008u is a perfect match, and from a software standpoint they operate in the same manner.

3 Installation is fairly simple and can be completed in the driveway with just a few basic hand tools and some knowledge of wiring. The first step of most head unit installations is removal of the dash surround. On our F-150, this meant simply grab and pull.

4 With the dash trim removed, the factory head unit can be disconnected and set to the side. It's a good time to note which wires go where and clean up any messes from previous stereo installations.



5



6

5 Alpine provides nearly everything you'll need for a complete installation. It's a good idea to give the directions a solid once over and verify that all of the necessary components for your particular installation are present.

6 One piece that is not included, but is a huge time saver, is the adapter to connect the Alpine wire harness to your truck's factory harness. We picked up ours for \$6 from Amazon. Connecting the two harnesses is as simple as matching the wire colors and crimping them together.



7 Since the Alpine head unit is universal, you'll need an adapter to allow it to secure properly in your vehicle, which Alpine can provide. Ours simply screwed onto the side of the unit; however, not listed in the instructions was the need to remove the rearmost tabs (arrows).

8 If you plan to use the Bluetooth calling features, you'll need to mount the microphone in a place where it can best pick up the sound of your voice. For us that meant removing the overhead console, driver side visor, and A-pillar molding.

9 The GPS antenna also needs a home where it has a clear view of the sky. We routed the wire under the dash and out through the defrost vent at the center of the windshield. Alpine provides a metal pad with an adhesive backing to place on plastic surfaces, and the antenna mounts via magnets.

10 One item that's not mentioned anywhere in the installation instructions is the need for a radio antenna adapter. Oddly enough, we used one meant for an older Chrysler product.

11 With the wiring harness complete and all of the other cables and adapters in place, we plugged the head unit in and powered it up. It's a good idea to do this as a test before fully installing the head unit in case there is something wrong or a piece of wiring needs to be revised. It would be awful to get everything buttoned up and then have the unit not turn on.



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12. We again followed the same test procedure after securing the head unit into the dash. After getting all of the wiring tucked into its final home, we verified that everything powered on properly, the GPS was functional, and audio could be heard from all speakers.

13. The installation took about four hours from start to finish and was relatively straightforward. If you're at all skittish about electrical work, however, it may be best to leave this one to a professional.

14. After living with the X008u for a few months we can tell you that the navigation is fantastic. Inputting destinations is quick and intuitive, and the point-of-interest menu works quite well. Traffic alerts have also been relatively quick loading and accurate.

15. Audio is also quite superb, with a multitude of options to tune the sound anyway you could possibly want. The built-in HD radio tuner works well in Los Angeles, where most of our stations are broadcast in HD. We had a little bit of trouble with it being slow to initiate Bluetooth audio, but that seems to have been cured by upgrading to an iPhone 6.

16. Buried deep inside the unit's multitude of menus are some interesting lists, such as men's shirt size conversions, shoe sizes, women's bra sizing, and a few more. We suppose this information may be helpful to someone, somewhere, someday... maybe. **TT**

12



13



14



15



16



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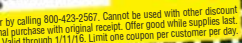
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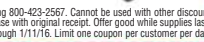
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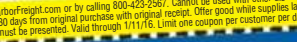
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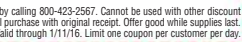
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LIGHT SPEED

By **Trevor Reed**



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What kind of a person paints black a metal parking lot post? Are they dumb, cheap, evil—or a mixture of all three? Do they *want* people to run into it? It wouldn't be surprising if all of these thoughts were going through the mind of James Potter the night his '05 Chevrolet Silverado 1500 came into contact with a pole that was camouflaged by darkness. While backing up, he heard that sickening crunch we all dread and instantly hit the brakes, but it was already too late. In addition to putting a dent in the bedside and scuffing the bumper, the invis-pole had smashed the passenger side taillamp.

Sure, some red plastic repair tape could keep everything legal, but James takes a lot of pride

in how his truck looks. Along with the crunched brake lamp, both of his headlamps had fogged over for the second time. He'd been searching junkyards every weekend but had absolutely no luck finding replacement parts for his '03-'06 Chevy truck, and the dealership wanted an arm and a leg for just one headlamp. James' plight is all too familiar, so instead of going back to stock, he decided to upgrade to LED-accented lamps by Anzo USA in the front and back of his truck.

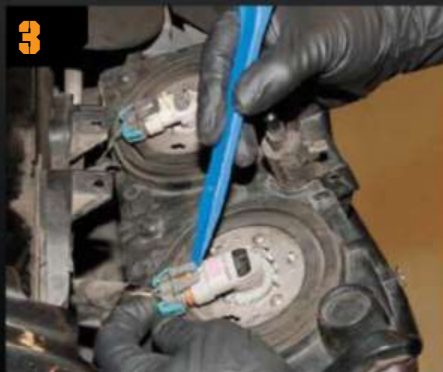
Along with fixing the existing problems, the Chevy received a new, modern look with the Anzo's "U-Bar" LED-accented headlamps (with LEDs for the turn signals) and LED brake lights (including the third brake lamp). These products fit all '03-'06 Chevy Avalanche/Silverado fullsize trucks and are designed for easy installation.

This '05 Chevrolet Silverado 1500 was suffering from foggy headlamps and a busted brake light before the LED upgrades came to the rescue. These Anzo USA direct-replacement Crystal U-Bar Black headlamps, G2 Black and Amber LED parking/turn lights, Black LED taillights, and a G3 Smoke LED third brake light update the look of the entire truck, and the installation took less than half a day.

James bought his truck new and a few years later used a kit to clear up his headlamps the first time they fogged over, but he was ready for a replacement when they turned yellow again. Then a malicious parking lot pole busted the passenger-side brake lamp, (along with scraping the bumper and putting a dent in the bed). After trips to junkyards proved unsuccessful and the dealership asking too much for a factory replacement, he decided to get LEDs for the front and rear of the truck.



THE INSTALL



1 Calin Head, the manager of our tech center, removes the L-shaped retaining pin that keeps the factory headlamp assembly in place.

2 With the pin removed, the lamp assemblies on each side can be pulled upward (dislodging the vertical tabs at the bottom) and then out of the fender housings.

3 Use a plastic pry tool to avoid breaking the tabs on the factory high and low beam plugs that will be reused on the new Anzo USA lamps.

4 With the headlamps on both sides out of the way, the turn signal/parking lamp housings can be removed by pushing in the plastic tabs near the fenders and then pulling the lamp assemblies out and towards the grille (to release the inner tabs).

5 All of the factory wiring and bulbs are re-used on the new parts, but this would be a great time to install some new bulbs. The Anzo USA G2 LED parking/signal (PN 511067) assemblies have tabs just like the factory parts that use the same mounts. By using a plastic pry bar, you can help snap the outside tabs into place and avoid unnecessary stress on the new parts.

6. The Anzo Crystal U-Bar headlamps (PN 111312) are plug-and-play, except for a couple of inline connectors that power the LEDs and attach to the turn signal wires (in this application, black to black for the ground wire and green to brown for power). Calin was careful during this step to make sure the teeth inside the clips made a solid connection but didn't damage the wires.

7. With the LED wires connected, the turn signal bulbs in place in the lower housings, and the factory low and high beam plugs in place, Calin installs the U-Bar headlamp assemblies by inserting the lower tabs into the factory slots and then replacing the upper retaining pins.

8. With the Anzo USA U-Bar headlamps and G2 turn/parking lamps installed, the decade-old Chevy now has a modern look that can be replicated on any '03-'06 Chevy Avalanche or Silverado truck.

9. To adjust your new headlamp beam levels, park the truck on level ground 20 feet away from a wall with the lights on. The beams should project level with each other. If they need adjustment, just lift the hood and use a Phillips head screwdriver to turn the adjustment knob on top of the headlamp assemblies.

10. With the tailgate down, Calin is able to remove the two screws that hold each factory brake lamp assembly in place.

11. Like the headlamps, the Anzo USA Black LED taillights (PN 311009) reuse the factory connections and all but one bulb.

12. To make the LED turn signals work with the factory wiring (and avoid the fast-blink typically seen with a blown bulb), each brake lamp comes with a prewired resistor box. Calin used brake cleaner to remove 10 years of grime inside the bed so the box can be mounted securely.



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13. After attaching the box, Calin removes the factory brake bulb on each side and inserts a connector that routes electricity through the resistor.

14. Calin holds the old broken taillamp next to the new Anzo LED brake light and the difference in styling is noticeable. The cracked plastic on the factory part reveals the stock brake lamp lenses had already started to turn yellow just like the headlamps.

15. Two screws are taken out so the yellowed factory third brake lamp assembly can be removed and replaced with the LED-powered Anzo USA G3 Smoke unit (PN 531075). Calin carefully uses a plastic pry bar to pop-out the old part and to release the tabs on the factory wiring harnesses to prevent them from breaking. Then, he plugs the factory leads into the provided harnesses and mounts the included resistor box. Calin makes sure the foam seal around the new LED assembly is secure so water doesn't end up leaking into the cab of the truck.

16. The Anzo USA brake lamps shine brighter than the old factory parts, and the third brake lamp assembly includes white LEDs to light up the cargo bed.



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REPLACEMENT FUEL TANKS



IN-BED AUXILIARY FUEL TANKS



REFUELING TANKS

THE GARAGE

» **ON THIS PAGE LONG-TERM TEST FLEET**
VERDICT: JEEP GRAND CHEROKEE AND CHEVROLET SILVERADO

SHOP CLASS P72
 FUEL INJECTION FUNDAMENTALS

VERDICT



We are big fans of the EcoDiesel 3.0L V-6. It's smooth, torquey, and fuel-efficient.



LONG-TERM NUMBERS

Report: 4 of 4
Previous Report(s): July/August '15, May/June '15, Nov/Dec '14
Base Price: \$46,195
Price as Tested: \$54,780
Miles to Date: 23,864
Miles Since Last Report: 8,558
Average MPG (this report): 23.52
Best Tank (mpg): 27.48
Worst Tank (mpg): 15.22 (Towing)
Test Maintenance: 10K Service – Oil Change, Tire Rotation, Top Off DEF, Electronic Updates
 20K Service – Oil Change, Tire Rotation, Top Off DEF
Test Problem Areas: Catalytic Converter (Warranty)

SEAN P. HOLMAN

2014 JEEP GRAND CHEROKEE OVERLAND ECODIESEL

By Sean P. Holman

» **Our year** with the Jeep Grand Cherokee EcoDiesel went by so fast that we were almost caught off guard when it was time for Jeep to come pick it up. With nearly 25,000 miles on the odometer, we were just thankful it wasn't a lease return or we would have been paying some serious mileage penalties.

During the past 12 months we learned some very important things about the Grand Cherokee, such as the key fob being able to survive a trip through the washing machine, us being able to survive an 18 hour day in the driver seat, and just how surprisingly capable the Grand is with a trailer attached.

The EcoDiesel and eight-speed combo proved to be an excellent pairing. With 240 hp and 420 lb-ft of torque, the EcoDiesel nicely splits the difference between the fuel-efficient gas V-6 model and the very capable, but thirstier, Hemi V-8 version. We regularly saw a range of 500-plus miles and often towed 6,000-plus-pound loads with confidence. If there is a complaint to lodge, our only knock is that there is a little bit of turbo lag off idle, but even then we are grasping at straws.

Service intervals came about every 10,000 miles, and the DEF tank was properly sized to mostly match our regular service

stops, although we did fall about 500 miles short of our second service. Our only unscheduled repair stop was for a check engine light, which led to a warranty replacement of our catalytic converter, a common issue with early EcoDiesel-equipped Jeeps and Rams. Otherwise the Grand Cherokee proved to be very reliable.

Where it excelled was in long-distance driving comfort, great all-weather capability, and towing—sometimes all on the same trip. We had an opportunity to experience this firsthand when we were caught in a surprise nighttime whiteout in Colorado, where the Jeep's technology got us through some tense hours safe and sound.



One for the features we really enjoyed on the Grand Cherokee was the glass roof—great for sightseeing in the city or a national park.

LOGBOOK QUOTES

"I just beat a Grand Cherokee SRT off the line. Granted it was from 0-40 feet with the turbo spooled, but that's a win in my book."

"Was caught in a complete whiteout in the middle of the night in the Colorado Rockies. Thankfully the Grand was the right vehicle to get me home safely."

"The Uconnect system has to be the industry standard in ease of use and functionality—it's fantastic."

If there is one area we'd improve, it's the harshness the Quadra-Lift suspension exhibits on the trail. The system has some great features, such as self-leveling for load, an aero mode for highway speeds, and the ability to rise up over obstacles when wheeling. However, on the trail, the suspension, in its highest setting, is harsh and noisy. In fact, we prefer the normal ride height, which affords more wheel travel and a better ride at the expense of ground clearance. Fortunately, the Grand Cherokee's available Off Road Adventure II package includes full skid plates and tow hooks to keep the undercarriage safe and make recovery easier, if necessary.

Two of the most-asked questions from people who noticed the EcoDiesel badge were "is that really a diesel?" and "what kind of mileage does it get?" Our test average over 23,864 miles was 22.59 mpg. Our best tank was 27.48 mpg, falling just short of the EPA estimate of 28, while our worst tank, with a 6,500-pound trailer in tow, was 15.22 mpg.

After wrapping up our test, we have no reservations about recommending the Grand Cherokee to anyone interested in buying one, especially with the EcoDiesel option. As journalists who get to drive just about every truck and SUV on the market, it should say something when we don't want to give up the keys to one we've been in for a year.



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VERDICT



LONG-TERM NUMBERS

Report: 4 of 4
Previous Report(s): Sept/Oct '15, July/Aug '15, Mar/Apr '15,
Base Price: \$45,050
Price as Tested: \$53,210
Miles to Date: 23,870
Miles Since Last Report: 6,260
Average MPG (this report): 16.4
Test Best Tank (mpg): 18.8
Test Worst Tank (mpg): 14.1
Test Maintenance: Oil and filter change, tire rotation, \$0 (Service included for 2 years / 24,000 miles)
Test Problem Areas: Engine squeak, fuel filler, software reflash

2014 CHEVROLET SILVERADO 1500 LTZ Z71

By **Steve vonSeggern**

Here in California, most people don't realize how good a fullsize truck is when used on a daily basis. Unfortunately, it's a land ruled by the Prius, and most people think pickups are only for cowboys and plumbers—stiff-riding utility vehicles with dismal fuel economy. They're missing out, because our year with the Chevy Silverado 1500 has proven that a 1/2-ton pickup is the perfect way to get around California with a family and toys and still achieve respectable fuel economy. We've learned a lot about the truck during our time together, and to sum it up, we're not happy to have to give it back.

The perfect bookend to this truck's year with us was another trip partway across the country to support our sister brand's (Diesel Power) event, Diesel Power Challenge in Denver, Colorado. Long-distance cruising is this truck's forte, and there's no better jaunt to stretch a vehicle's legs than the mostly empty stretch between Los Angeles and Colorado. It's just over 1,000 miles from our offices in Southern California to the normally sunny mile-high city, and most travelers make the trip in two days. However, making the trip in one day with this truck is completely comfortable and effortless, regardless of weather. In fact, the cab is so

quiet and relaxed at 80mph speeds that it's possible to join conference calls via the onboard Bluetooth system without anyone noticing you're mobile. During a week of running around Denver, it never stopped raining, and the trip home involved snow and slush around the Continental Divide on I-70, but none of that was able to slow the Silverado from its appointed rounds. The only regret during long-distance travel is the size of the fuel tank. Range is typically just shy of 400 miles on the highway, which is good, but 500-plus miles would make this an even better long-distance traveler. Otherwise, it's hard to even explain how comfortable and fatigue-free it is to drive the Silverado for even 13 hours at a time.

Our third and last service was requested

As with most modern trucks, there's plenty of interior storage for your registration, extra fast-food napkins, lost sunglasses, and Van Halen albums.

LOGBOOK QUOTES

"Front parking assist is great at crying wolf but not actually useful for parking."

"Traffic data takes so long to appear on screen that I'm usually where I need to go before I know what the traffic is like."

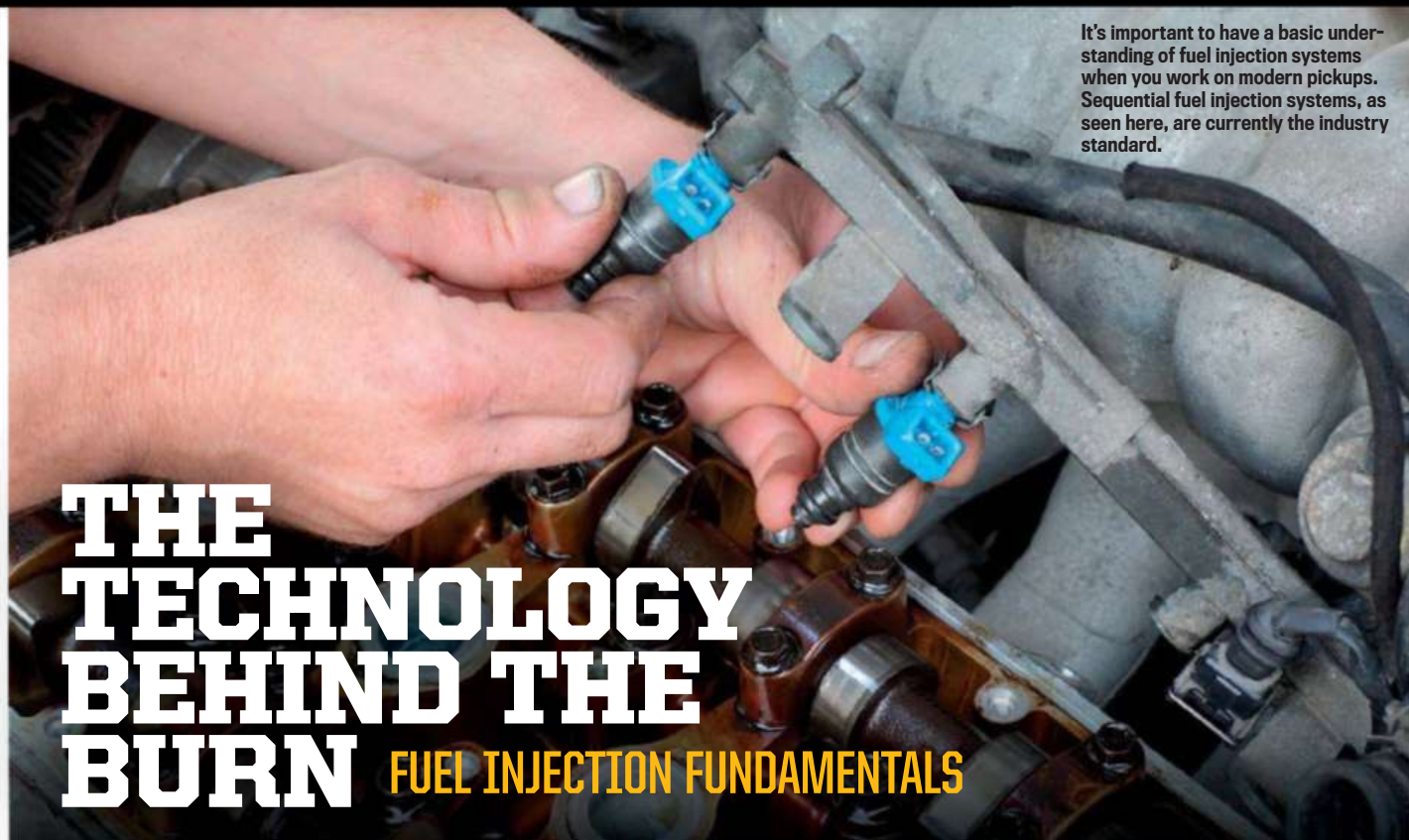
"Best truck for an LA-to-Denver nonstop ever."



by the onboard diagnostics at 23,500 miles and was again handled expertly at Guaranty Chevrolet in Santa Ana, California. Service again consisted of oil and filter change and tire rotation. Thankfully it fell just within the truck's no-charge service for 2 years or 24,000 miles. Aside from the initial recall last year involving a necessary computer reflash to correct a transfer case issue, there have been no other technical service bulletins or recalls during our year of testing. Nothing has fallen off or wiggled loose, and there are no rattles or unexplained noises emanating from anywhere.

Nothing's perfect, and our complaints are mostly regarding electronics. The navigation system displays traffic on the map, but data acquisition is agonizingly slow at start up. There's a voice-activated function, but we were never able to get it to understand our commands. Also, the backup camera is a little low-resolution and fuzzy, making trailer connections harder than they should be. We didn't find the forward park assist to be very useful. Finally, Bluetooth connectivity is a fantastic feature but seemed to be in a transition phase where the audio play function only worked most of the time.

Overall, the build quality, fit-and-finish, and the way this truck has held up during our year of testing are what have impressed us the most. The competition in this segment has forced everyone to build a better product, and the consumer is benefitting from it.



It's important to have a basic understanding of fuel injection systems when you work on modern pickups. Sequential fuel injection systems, as seen here, are currently the industry standard.

THE TECHNOLOGY BEHIND THE BURN FUEL INJECTION FUNDAMENTALS

The carbureted car and truck era phased out by the early '90s. Carbs are still in use today on a few motorcycles, lawn mowers, and other power equipment, but electronic fuel injection (EFI) is standard equipment on almost everything we drive. So we're going to review EFI's basic operation, the different types of systems, and more recent technology.

Let's start from the beginning with a refresh on carburetors. Carbs were produced in numerous shapes, sizes, brands, and models, with some bolted on top of a V-8's intake manifold, others mounted directly to the rear

of a motorcycle's straight-four cylinder head. There were single-barrel carbs, two-barrels, and four-barrels, with performance configurations like dual quads (two four-barrels), a six-pack (three two-barrels), and so on.

Each carburetor's barrel is a focal point. This is where air flows through the throat of the carb and into the engine. Airflow is regulated by the carburetor's throttle plate, opened and closed by means of a cable routed to the accelerator pedal. Each barrel utilizes the physics of what's known as the venturi effect. The inside diameter of each barrel is narrower in the middle, compared to the top and bottom. This design speeds up airflow and creates an area of low pressure. This low air pressure draws fuel up from the carburetor bowl through passages, where the fuel mixes with air forming a mist (atomization). This air/fuel mix, which is ideal for combustion, travels through the intake manifold and past the engine's intake valves, then is compressed by the pistons and ignited by sparkplugs.

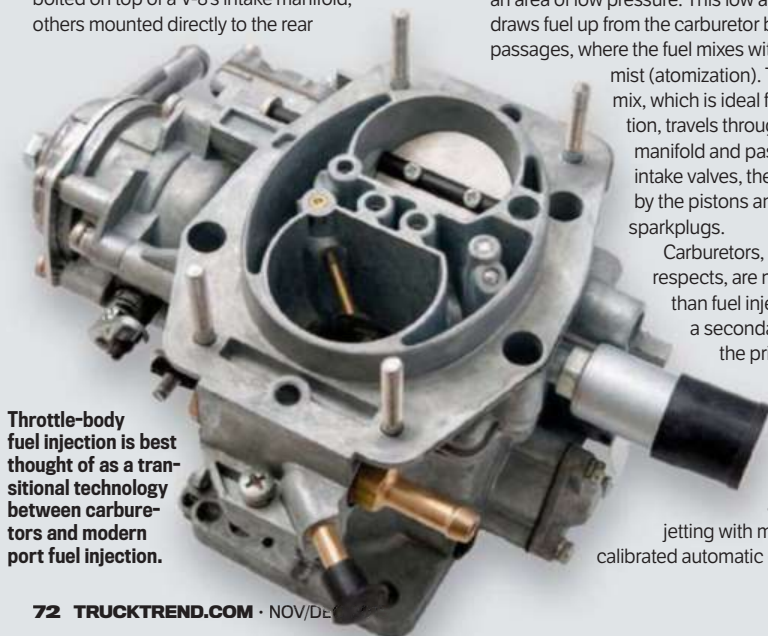
Carburetors, in some respects, are more complex than fuel injectors. Some use a secondary venturi within the primary of the barrel. There are variable venturis; high numbers of air and fuel circuits and jets; variable jetting with metering rods, calibrated automatic choke, and cold-

start enrichment setups; and idle control linkage arrangements. Even computer-controlled carbs were on the market for a period of time.

Electronic Fuel Injection (EFI)

As opposed to a carburetor, which mixes fuel with air by means of a venturi, a fuel injector requires high fuel pressure. This pressure is typically delivered from the tank by an electric fuel pump. The injector itself is a simple electric solenoid (open/closed valve), which is normally closed, that opens with power and ground applied. With a specific amount of fuel pressure at the input side of the injector and the solenoid activated (open), fuel is put out through a nozzle in a fine, umbrella-shaped spray pattern. This process provides better atomization of the fuel, which improves combustion.

The leading advantage of EFI is its precise control of fuel delivery to reduce tailpipe emissions while improving both performance and fuel economy. Each injector receives power with the ignition on, but the on/off command that completes the ground side of the circuit is applied by the Powertrain Control Module (PCM) in a rapid pulsing fashion. This is referred to as pulse width modulation, or the amount of time the injector is commanded on in milliseconds. The duty cycle is the ratio of on time compared to off. A 60 percent duty cycle means the injector is commanded on, injecting fuel 60 percent of the time.



Throttle-body fuel injection is best thought of as a transitional technology between carburetors and modern port fuel injection.

DATA INPUTS FOR EFI CONTROL

- Crankshaft speed/timing
- Camshaft speed/timing
- Mass airflow
- Manifold absolute pressure (vacuum)
- Exhaust oxygen content
- Intake air temperature
- Coolant temperature
- Throttle position
- Barometric pressure
- Evaporative emissions canister purge status
- Fuel pressure

High-pressure common-rail diesel injectors are very precise and very expensive. Seen here is one from a Ford 6.0L Power Stroke.

The textbook air/fuel ratio is 14.7:1 (stoichiometric mixture). This is where combustion burns almost 100 percent of the fuel entering the engine. As we've learned from many other automotive electronic systems, three basics are required: data input, an electronic control unit to decipher the data, which is finalized by accurate output commands from the same ECU.

The PCM processes incoming data and commands the appropriate duty cycle to the injectors, attempting to stay as close as possible to a stoichiometric mixture. This is accomplished at a high rate of speed in order to maintain an optimal air/fuel ratio under various driving conditions. Usually, cruising at 55 mph on the highway under light throttle is as efficient as it gets. Punching the gas pedal to the floor requires a much higher duty cycle to provide full power under high demand. Oxygen sensors, interpreting air/fuel ratio by the amount of O₂ remaining in exhaust gasses, are critical in fine-tuning fuel distribution and maintaining an elite level of fuel economy and low emissions.

Single-Point Injection

At first glance, early mass-produced electronic fuel injected engines looked very much like they were carbureted. Single-point injection used a throttle body unit similar in base-structure to a carburetor, including a throttle plate(s) to control airflow, but with one or two extra-large fuel injectors mounted on top. The atomized fuel then traveled through the intake manifold's runners to each cylinder's intake valves—just like a carburetor. Single-point injection made economic sense because older carbureted intake manifolds could be used with light modifications. The throttle body unit also incorporated an idle air control valve (IAC) and a throttle position sensor (TPS). One of the few throttle body performance setups, Cross-Fire Injection, was produced by GM from '82 to '84 on some 5.0L and 5.7L V-8 Corvettes, Camaros, and Firebirds. Two throttle body injection units were affixed to a modified intake manifold, each feeding the four cylinders on the opposing side of the engine—therefore, Cross-Fire.

Multiport Fuel Injection

Multiport injection is the basis of most of today's EFI systems. An individual injector is provided for each



cylinder, located in the intake manifold just before each intake valve. The input ends of the injectors are connected to a common regulated fuel rail, so the sole high-pressure pump can deliver fuel across the board. And there's still a throttle body regulating airflow at the main entry to the intake plenum. The plenum is a chamber between the throttle body and where the manifold runners split up to each intake port of the cylinder head. The throttle position sensor and idle air control valve are still incorporated with the throttle body, along with a manifold absolute pressure sensor on some applications.

Early multiport systems used a batched injection command (meaning the duty cycle was applied to the injectors in groups) or simultaneous, in which all injectors were opening at the same time. This process would accumulate fuel on the back of each intake valve until that cylinder reached its intake stroke. The intake valve would then open and allow entry of the calculated air/fuel mixture. More current multiport systems take advantage of sequential injection. This enables each injector to spray fuel in the engine's firing order, while the PCM varies spray-timing with its designated cylinder's intake stroke. This technique is very similar to spark timing, where the plug fires in advance of the piston reaching top-dead-center of its compression stroke.

Direct Injection

Direct injection implies just that. More robust fuel injectors are mounted in the cylinder head and inject fuel under extreme pressure directly into each cylinder's combustion chamber, eliminating any fuel delivery through the intake manifold (upstream of the intake valve).

Diesel Direct Injection

When discussing direct injection, mass production has always focused on diesel engine applications. Lower-compression gasoline engines allow the air/fuel mixture to enter the cylinder past the intake valve, compressed by the upcoming piston and then ignited by a spark. High compression diesel engines (no spark) use the heat developed from the compression of air to ignite the mixture. The fuel must be injected at precise timing with the compression stroke. Otherwise the air/fuel mix would ignite too early and trash the combustion process.

The most common means of automotive diesel injection for many years was mechanical, with the use of an injection pump. Just like a spark-engine's distributor, the injection pump is driven by the crankshaft/camshaft. As the pump rotates, it applies bursts of fuel past spring-loaded injectors calibrated to open at a specific pressure, in time with each cylinder's compression stroke. The fuel ignites the moment it reaches the combustion chamber. Unlike gasoline engines, diesels use a wide-open air intake (no throttle body), and engine speed is controlled strictly by fuel delivery.

Modern diesel engines use complex electronically controlled systems utilizing the age-old basics. The high fuel pressure is still supplied by a mechanically driven pump, but the injectors are now PCM-controlled electronic solenoids. Many additional data inputs are used in the algorithm, and both fuel pressure and injection timing are dynamically applied, with fuel pressure at the injectors reaching as high as 36,000 psi.

Gasoline Direct Injection

Automakers are in the early stages of a gasoline direct injection transition, just like we moved on from carburetors to EFI. The technology has been out for quite some time. About 15 years ago we questioned a GM engineer on the delay of gasoline direct injection production. GDI was already known to improve both performance and fuel economy, so the answer was simply "cost". Heavy-duty injectors, which can hold up to high fuel pressure, combined with extreme combustion pressures and heat, were expensive. Plus a much higher-pressure fuel pump with matching pipes and rails had to be added to the standard multiport injection configuration.

Electronic throttle control is currently standard equipment on most production multiport-injected cars and trucks and will continue with GDI.

Multiport injection fuel pressure can vary in the 35-65 psi range, supplied by the electric motor driven pump in the tank. That same device is considered a fuel feed pump for direct injection. A lot like diesel injection, the electric pump now feeds a volume of fuel under moderate pressure to a hydraulic pump driven by the crankshaft or camshaft. The mechanically driven pump can output 500-3,000 psi, depending on engine speed. With the optimum pressure directed to all injectors at the fuel rail, the duty cycle command is applied to meet the driving condition. GDI edges out multiport injection with more accurate timing of fuel direct to combustion, without the external delay of the intake manifold. Direct injectors often use nozzles, which aim fuel to deflect off the piston-top architecture and create turbulence for a more efficient burn. **TT**



While diesel engines have had direct injection for many decades, it's a fairly recent development on gasoline engines.



By Colin **RYAN**
Photos Courtesy of Volkswagen

THE WORLD'S MOST FAMOUS VAN

VOLKSWAGEN TRANSPORTER

It's probably the most famous van in the world. It helped a war-torn German economy get back on its feet and subsequently became an iconic mode of transport for surfer dudes half a world away. Steve Jobs once had one but sold it to finance his little computer company. It's the Volkswagen Type 2.

Jerry Seinfeld still owns one. He even used a rusted-out pickup version in the Michael Richards episode of *Comedians in Cars Getting Coffee*. In 2000, an American couple—Amanda and Rich Ligato—left their jobs, bought and modified a '78 VW camper van, and then clocked 60,000 miles driving it around Central America, South America, and Africa. And they're far from being the only couple to have undertaken epic trips in VW vans.

The rarest version, a barndoor Samba with 23 windows, including those little ones in the roof, can now sell at auction for around \$200,000. Not bad for a vehicle range with dodgy electrics and a steering wheel angle guaranteed to hurt your wrists. Plus, it won't go up hills or brake all that well either.

The Type 2 came about after a Dutch car importer, Ben Pon, visited VW's Wolfsburg plant in 1947 looking to buy some Type 1 cars (also known as the original Bug). Pon noticed that the workers often used flatbed runabouts adapted from the Type 1 to move various car parts from one area of the factory to another. Light bulb moment.

He started sketching what a commercial vehicle based on the rear-engined Bug might look like, with

the front end influenced by trolley cars (trams) that were popular in Europe at the time. As it happened, the Type 1's platform wasn't strong enough, so VW created a one-piece body based on a ladder frame but using the Bug's engine and axles. By 1949, VW had a panel van and a minibus ready for production and officially introduced the Type 2 at that year's Geneva Motor Show.

The Type 2 was cheap and simple. Its basic form meant it could be square one for so many uses, like a mobile shop or delivery van, or even a fire engine, ambulance, or ice cream van. The side door was another little stroke of genius. By 1954, there were

30 variants (including the famous Microbus) and 100,000 units had already rolled off the production line. As such, the Type 2 went beyond the purpose of commercial vehicle. It was the post-war economic boom, and the first time in history where working-class people could afford personal transport for leisure pursuits.

Remarkably, this boxy shape was refined in the wind tunnel of Braunschweig Technical University to achieve a lower drag coefficient than the Type 1—0.44 compared to 0.48. The engine, of course, was that famous air-cooled flat-four. It displaced 1.1 liters and made all of 24 hp.

The first Type 2 (also codenamed T1, confusingly) had a two-piece windshield (or split screen). When generation two (codenamed T2) debuted in 1968, it came with a one-piece windshield and soon had the "bay window" nickname attached to it. Out back was the Beetle's now-1,600cc engine making 47 hp. From 1972, North American-spec vehicles had the 1.7L engine that developed 75 hp and 94 lb-ft of torque. A revised rear suspension deployed a double-joint rear axle with semi-trailing arms, freeing up some more interior space.

The T2 was made in a few countries, like Mexico and Brazil, and total production runs varied from place to place. The last T2 to ever roll off a VW assembly line was a Kombi bus in Brazil, in 2013.

Generation three (with a water-cooled boxer-four) is better known in the United States as the Vanagon, while the front-drive fourth and fifth generations are usually referred to as Transporters, although the fourth generation was sold here as the EuroVan. The T6 debuted this year for markets outside North America.

Transporter was a name used when the Type 2 first appeared, but one nickname that has stood the test of time is "Bulli," which appears to be a contraction of two German words meaning bus and delivery truck. Believe it or not, those early vehicles used on the VW factory floor—and the inspiration for Ben Pon—proved so reliable that the last one wasn't taken out of service until 1994. **TT**



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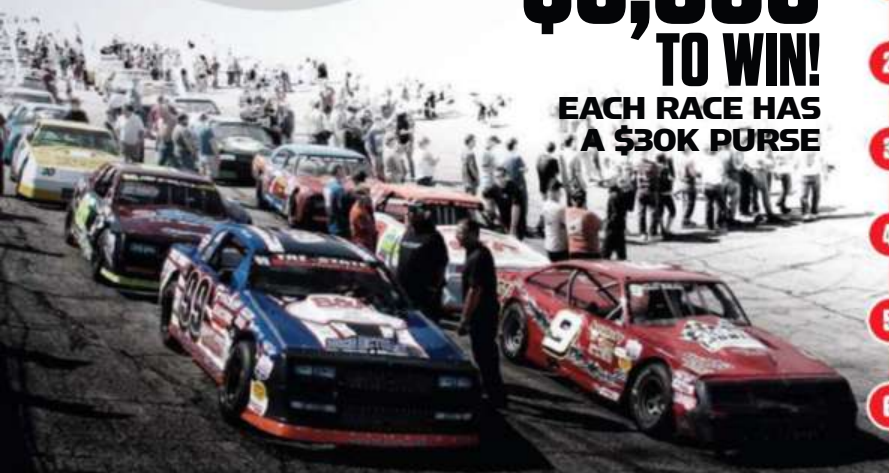


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By Brett T. Evans

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Tuff Truck Bags
tufftruckbag.com



Jurassic Style

Available for the Chevy Colorado, T-Rex now offers a full line of aftermarket grilles. Our favorite is the Billet Series grille. True to its name, the Billet Series gives the standard Colorado grille some extra aluminum bling, with very nice horizontal bars filling it in but retaining the standard Chevy bow tie and chrome accouterments. The Billet Series is also available in tough-looking black anodized aluminum.

T-Rex Truck Products
951-270-5388
trexbillet.com



Race-Inspired

Die-hard Chevy fans love their Camaros, and for the Silverado owner who can't get enough of the muscle car, 6LE Designs offers the ZR1 Hood, available for the '07-'13 Chevrolet 1/2-ton. This hood has vents and bulges similar to those on the mighty supercharged Camaro ZL1, and it would be ideal for added style, engine cooling, and individuality.

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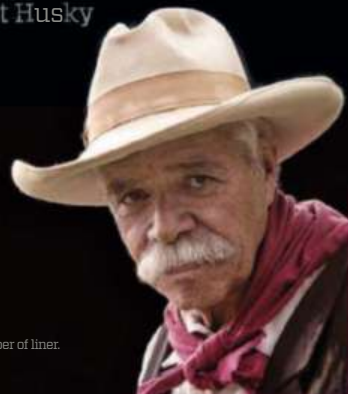


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There are hard tonneau covers, there are folding tonneau covers, and there are rolling tonneau covers. And now, with the TruXedo Titanium, there are tonneau covers that are all three in one. The hard aluminum core is bonded to leather-grained vinyl, giving it a low-profile appearance like other rolling covers. However, that hard aluminum backbone provides superior strength, and the slatted design means you can roll the cover up and preserve your bed's open carrying capacity.

TruXedo
truxedo.com



Running with the Devil

With more and more EcoBoost F-150s running around, it was only a matter of time before they started getting tuned for power and torque. Diablosport is on the ball with an EcoBoost tuner compatible with the '15 F-150 equipped with either the 2.7L or 3.5L EcoBoost. In the case of the larger engine, the tuner can add 70 more horsepower and 100 more lb-ft of torque, for totals of 435 hp and 520 lb-ft. That's insane power for an already athletic pickup!

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On a Rampage

The open-air Jeep Wrangler's only real failing is its complicated top mechanism. Luckily, the Rampage Frameless Soft Top does away with that by stretching around the Jeep's factory roll bars rather than an external frame. The snug roof also incorporates larger plastic windows (tinted or clear) and stretches tighter for less flapping at speed. Marine-grade zippers and heat-sealed seams keep moisture out, and the top is available for all '95-'15 Jeep Wranglers (including the Unlimited).

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THE MOST
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MIDSIZE

'06-'14 Honda Ridgeline

The Ridgeline is Honda's first—and so far, only—pickup truck. And although it was developed especially for the North American market, it doesn't rigidly follow the formula set down by Ford and Chevy all those years ago.

It debuted for the '06 model year, with Honda hoping it would establish itself as a new breed of vehicle, a sport utility truck. The body and frame are a single unit, similar to the Honda Pilot SUV, making it a unibody construction but with steel reinforcement (seven structural cross-members). An independent rear suspension meant no leaf springs, which that made room for a trunk concealed beneath the bed.

The trunk is lockable and its volume is 8.5 cubic feet. In real terms, that's up to three golf bags. It also has a drain plug so it can be filled with ice and act as a giant cooler.

Honda did away with cab/bed permutations and offered the Ridgeline solely as a four-door crew cab with seating for five. The tailgate can swing down or to one side to access a steel-reinforced, dent-resistant and rustproof composite bed that's five feet long and four feet wide. Maximum payload is 1,550 pounds. Gary Flint, one of the main engineers behind the Ridgeline, claims that a unibody can be lighter, yet stronger, than a traditional body-on-frame construction.

There's only one engine in the bay: a 3.5L V-6. Initially, it made 255 hp and 252 lb-ft of torque—not a great deal of low-end thrust. In '07, that changed to 245 hp and 247 lb-ft (even less low-end punch and one of the main gripes about the Ridgeline). A five-speed automatic transmission and all-wheel drive are both standard.

The EPA classifies the Ridgeline as a midsize truck and estimates fuel consumption at 15 mpg city, 20 mpg highway, and 17 mpg combined. Rare

for a truck, the Ridgeline is classified as an ultra-low emissions vehicle (ULEV), thanks to its clean-running engine.

Trim levels started out as RT, RTS and RTL. RT still has power windows, locks, and mirrors, plus cruise

control and 17-inch steel wheels. Six steel tie-down hooks in the bed and four flush-mounted cargo lights are standard throughout the range. Beginning with the '07s, a new RTX trim slotted between the RT and RTS, bringing a chrome grille, alloy wheels, and a trailer hitch.

Some mild styling tweaks inside and out were part of a mid-generation revamp in '09. The trailer hitch became standard for every trim level, along with two more tie-downs in the bed and active front seat head restraints to mitigate whiplash. That's also when engine output rose (ever so slightly) to 250 hp and 247 lb-ft, and the RTL trim received a 115V outlet to join its three 12V outlets, plus 18-inch alloy wheels.

The Ridgeline remained fairly constant until '12 when a new grille design arrived, accompanied by a new trim level replacing the RTX: the Sport (18-inch alloys, fog lights, leather-wrapped steering wheel with audio controls). Highway mileage also improved by one mpg.

In '13, a rearview camera became standard across the range and '14 saw a new range-topping Special Edition (SE) trim.

There have been nine recalls, including the now-infamous Takata airbag issue that has affected millions of vehicles from various manufacturers. A faulty fuel pump in the '06 model is probably the other recall most worthy of attention.

The Ridgeline is almost universally well loved by owners, and although Honda says it plans to build a second generation, new-vehicle sales never really took off, which could make it an excellent used buy. A '09 RTS in good condition and with 50,000 miles on the odometer is valued at \$17,192. The closest rivals would be a Chevrolet Avalanche, where a similar '09 LT Sport is worth \$22,118, or a Ford Explorer Sport Trac XLT at \$19,590. **TT**

2006-2014 Honda Ridgeline

BODY TYPE	4-door pickup
DRIVETRAIN	Front engine, 4WD
AIRBAGS	Driver, front passenger, side curtain
ENGINES	3.5L/255hp SOHC V-6 ('06); 3.5L/245hp SOHC V-6 ('07-'08); 3.5L/250hp SOHC V-6 ('09-on)
BRAKES, F/R	Disc, disc, ABS
PRICE RANGE, WHLSL/RETAIL (KBB)	\$7,573/\$8,624 ('06 AWD RT 3.5L V-6), \$30,569/\$33,318 ('14 AWD SE 3.5L V-6)
NHTSA FRONTAL IMPACT RATING, DRIVER/FR PASS:	Five stars/five stars (not rated after 2011, except for four stars in rollover test)
RECALLS	Too many to list; see motortrend.com

One of the Ridgeline's most unique features is its lockable, drainable under-bed trunk.



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